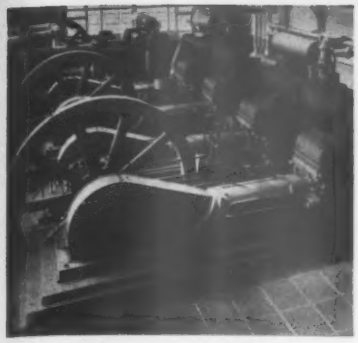

Cover is close-up of one of nine cross compound compressors; Southern California will replace them with turbo-charged engines

---

OUR lead story is the annual report on natural gas reserves. Despite the huge gain in natural gas production, proved recoverable reserves continue to forge ahead. . . . Eager householders still want gas to heat their homes. Last year some million and a half new house heating customers were added to utility lines. The gas industry can look for a similar increase for the next three years, the Bureau of Statistics reports on page 15. . . . A national television show for the gas industry is now an immediate objective. Last month Frank Trembly laid before the New England Gas Association meeting the plan conceived by A. G. A.'s National Television Committee. Read about it on page 11. . . . How does the amount people earn affect the amount they spend? If this could be computed accurately a valuable tool would be available to our planners. The Bureau of Statistics discusses the possibilities on page 17. . . . The advertisement on the opposite page is one of a continuing series on industrial and commercial uses of gas. This appeared in "Newsweek" and three leading metal industry journals.

JAMES M. BEALL
DIRECTOR, PUBLIC INFORMATION

VAUGHAN O'BRIEN
EDITOR

RICHARD F. MULLIGAN
ART SUPERVISOR

MARGARET A. BLOCH
NEWS EDITOR

EDITORIAL OFFICES:
AMERICAN GAS ASSOCIATION
420 LEXINGTON AVE., NEW YORK 17, N.Y.

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VOL. 38 NO. 4

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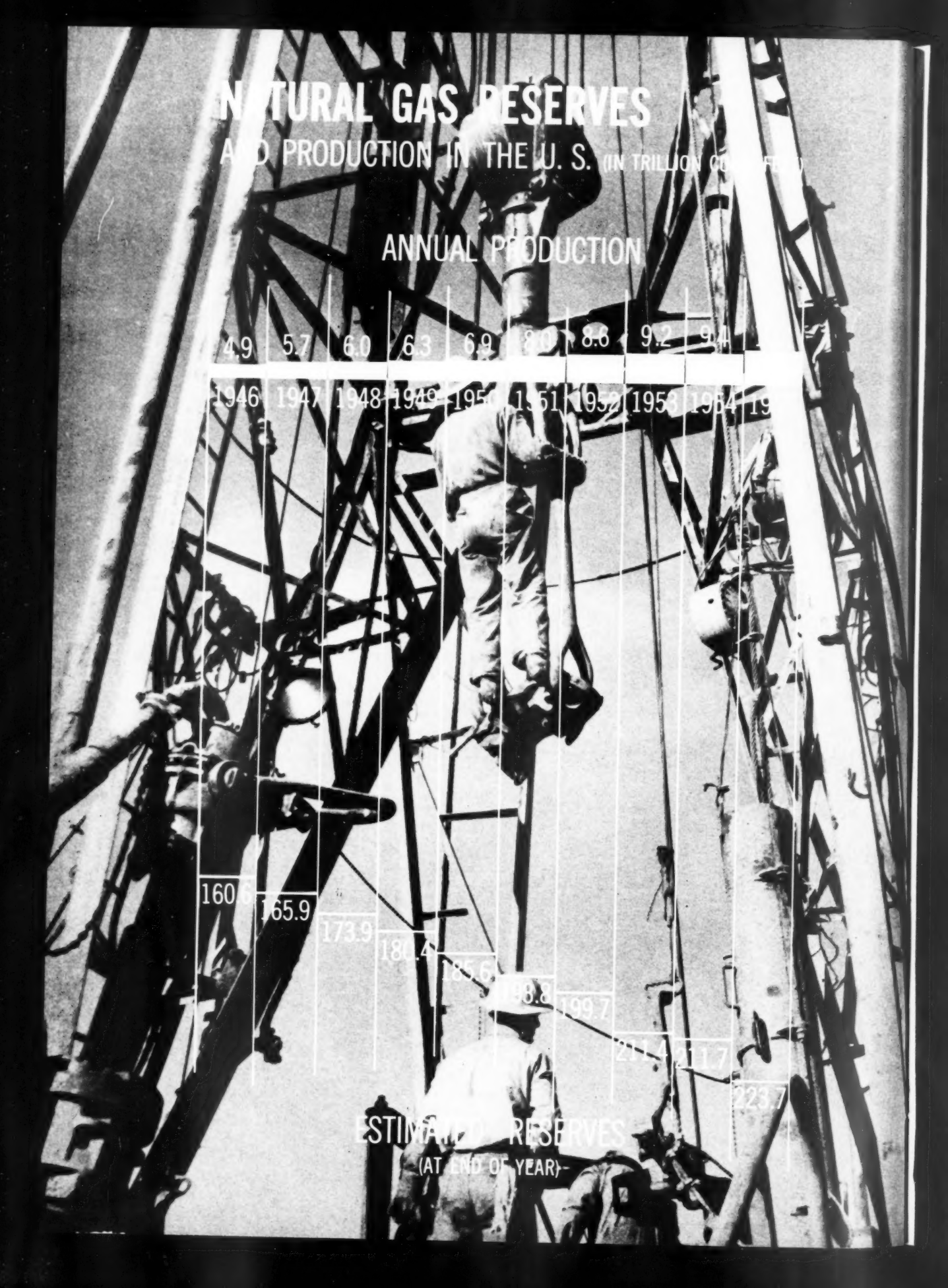

NATURAL GAS RESERVES
AND PRODUCTION IN THE U. S. (IN TRILLION CU. FEET)
ANNUAL PRODUCTION
4.9
5.7
6.0
6.3
6.9
8.0
8.6
9.2
9.4
1946
1947
1948
1949
1950
1951
1952
1953
1954
160.6
165.9
173.9
199.7
223.7
ESTIMATED RESERVES
(AT END OF YEAR)

# Reserves gain 12 trillion cu. ft.

Proved recoverable natural gas reserves in the United States on December 31, 1955 showed the second greatest increase over the previous year of any year since 1945, when American Gas Association started publishing official estimates. At the beginning of 1956, such reserves achieved a new high level of 223.7 trillion cubic feet, an increase of 12.0 trillion cubic feet over reserves of 211.7 trillion cubic feet a year earlier, it was announced in a joint report of the Committee on Reserves of the American Gas Association and the American Petroleum Institute.

Extensions and revisions of previous estimates, and new discoveries of natural gas in 1955 once again exceeded production which attained a new peak of 10.1 trillion cubic feet. This record production of natural gas was about 700 billion cubic feet more than the previous record of 9.4 trillion cubic feet of natural gas used in 1954.

The A. G. A. Committee on Natural Gas Reserves estimated that proved recoverable reserves of natural gas liquids had increased at the year-end to total 5.4 billion barrels. This represented a gain of about 194.1 million barrels during 1955, compared with a loss of 193.4 million barrels in reserves in the previous year. The production of natural gas liquids during 1955 totaled 320 million barrels as compared with 301 barrels produced in 1954.

New discoveries of natural gas reserves in 1955 totaled 5.7 trillion cubic feet, compared with 5.0 trillion cubic feet of new reserves brought in during 1954. Extensions and revisions of previous estimates during 1955 added 16.3 trillion cubic feet to reserves. Such extensions totaled 4.6 trillion cubic feet a year earlier. Nearly 87.6 billion cubic feet of natural gas were added to estimated reserves in underground storage during 1955.

Crude oil reserves on December 31, 1955 totaled approximately 30.0 billion barrels, compared with 29.6 billion barrels at the end of 1954, also a new record. The total estimated liquid hydrocarbon reserves on December 31, 1955 were 35.4 billion barrels, compared with 34.8 billion barrels a year earlier.

A tabulation of natural gas reserves and production appears on the following pages.

Table 3 (on page 23) is a summary of the Committee's annual estimates of proved natural gas reserves for the past eleven years, reflecting the changes in the natural gas reserve position in the United States during each of the ten years since December 31, 1945. Table 4 (also on page 23) shows the proved natural gas liquids reserves of the United States for the last ten years, and the changes which have taken place in these reserves annually since the first estimate was made as of December 31, 1946.

In order to arrive at an estimate of the total proved liquid hydrocarbon reserves in the United States, the reserves of natural gas liquids shown in Table 2 have been added to the reserves of crude oil estimated by the Committee on Petroleum Reserves of the American Petroleum Institute. The total liquid hydrocarbon reserves are shown in Table 4 of the report of the Committee on Petroleum Reserves.

The Committee has continued the practice, begun in the report of December 31, 1948, of reporting the volume of gas in underground storage reservoirs. Since December 31, 1953, these figures have been based on data furnished by the Committee on Underground Storage of the American Gas Association. Prior to the report of December 31, 1953 the native gas remaining in a storage reservoir when injection began was classified and listed, for the most part, as a non-associated natural gas reserve and was not included in the underground storage figure. *(Continued on next page)*


## COMMITTEE ON NATURAL GAS RESERVES

N. C. McGowen (Chairman), United Gas Corporation
R. M. Bauer, Southern California Gas Company
Wm. F. Burke, Lone Star Gas Company
M. M. Fidlar, Mountain Fuel Supply Company
R. O. Garrett, Texas Gas Exploration Corporation
B. B. Gibbs, Union Producing Company
C. C. Hoffman, Cities Service Gas Company
F. S. Lott, U.S. Department of the Interior
E. D. Pressler, Humble Oil and Refining Company
E. E. Roth, Columbia Gas System Service Corporation
J. T. Scopes, Union Producing Company
C. E. Turner, Phillips Petroleum Company
Warall J. N. Whipple, Southern Natural Gas Company
D. Parson (Secretary), American Gas Association

Beginning with the December 31, 1953 report, all gas, including native and stored gas, is included in the underground storage figures. Adjustments in, withdrawals from, or additions to storage are included in the figures shown under the heading "Net Change in Underground Storage." Changes in underground storage are excluded from the column headed "Net Gas Production." Net gas production is the gross production from producing reservoirs less that gas returned to producing reservoirs in cycling and repressuring projects.

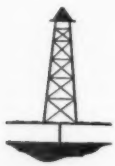
In view of the great diversity of pressure bases specified by different jurisdictions throughout the United States, attention is drawn to the fact that natural gas reserves estimates published in this and previous reports of this Committee have been based on standard conditions of 14.65 psia and 60° F.

The Committee wishes to point out that it is often not possible to estimate the total reserves of a field in the year of its discovery. Satisfactory estimates can be made only after there has been sufficient drilling in the fields and, in some cases, adequate production history established. For these reasons, the reserves listed as discovered during any current year must be considered only as the reserves indicated by the drilling in that year.

The reserves of all fields and pools are reviewed and revised upward or downward in each succeeding annual report to reflect additional information on preceding estimates. These changes are shown as "Extensions and Revisions."

The procedure followed in estimating and assembling the proved reserves figures is the same as that used in the past reports. A proved reserve may be in either the drilled or un-

*(Continued on page 22)*



## NATURAL GAS

| | December 31, 1955 | December 31, 1954 (Thousands of cubic feet) | Increase 1955 Over 1954 |
|---|---|---|---|
| Reserves, Natural Gas | 223,697,445,000 | 211,710,732,000 | 11,986,713,000 |

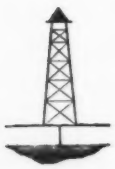
| | 1955 | 1954 | Increase 1955 Over 1954 |
|---|---|---|---|
| Production, Natural Gas | 10,118,118,000 | 9,426,509,000 | 691,609,000 |

The production figures for 1955 are net after deducting the amount of gas returned to reservoirs for cycling and pressure maintenance.

## LIQUID HYDROCARBON RESERVES

| RESERVES | December 31, 1955 | December 31, 1954 (Barrels of 42 gallons) | Increase 1955 Over 1954 |
|---|---|---|---|
| Crude Oil | 30,012,170,000 | 29,560,746,000 | 451,424,000 |
| Natural Gas Liquids | 5,438,565,000 | 5,244,457,000 | 194,108,000 |
| Total Liquid Hydrocarbons | 35,450,735,000 | 34,805,203,000 | 645,532,000 |

| PRODUCTION | 1955 | 1954 | Increase 1955 Over 1954 |
|---|---|---|---|
| Crude Oil | 2,419,300,000 | 2,257,119,000 | 162,181,000 |
| Natural Gas Liquids | 320,400,000 | 300,815,000 | 19,585,000 |
| Total Liquid Hydrocarbons | 2,739,700,000 | 2,557,934,000 | 181,766,000 |



## NATURAL GAS RESERVES

(Thousands of cubic feet—14.65 psia, at 60°F)

| | | |
|---|---|---|
| Total proved reserves as of December 31, 1954 | | 211,710,732,000 |
| Extensions and revisions of previous estimate during the year of 1955 | 16,298,125,000 | |
| New reserves discovered in 1955 | 5,719,069,000 | |
| Net changes in underground storage during 1955 | 87,637,000 | |
| Total proved reserves added and net changes in underground storage during 1955 | | 22,104,831,000 |
| Total proved reserves as of December 31, 1954 and additions during 1955 | | 233,815,563,000 |
| Deduct production during 1955 | | 10,118,118,000 |
| Total proved reserves of natural gas as of December 31, 1955 | | 223,697,445,000 |

Reserves data are shown by states in Table 1

# TABLE 1

## ESTIMATED PROVED RECOVERABLE RESERVES OF NATURAL GAS IN THE UNITED STATES

(Millions of Cubic Feet—14.65 psia, at 60 Deg. F)

| | Changes in Reserves during 1955 | | | | | Reserves[b] as of December 31, 1955 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reserves as of Dec. 31, 1954[b] (1) | Extensions and Revisions[b] (2) | Discoveries of New Fields and New Pools in Old Fields[b] (3) | Net Change in Underground Storage[c] (4) | Net Production[d] (5) | Total (Columns 7 + 8 + 9 + 10, also Columns 1 + 2 + 3 + 4 less Column 5) (6) | Non-Associated[e] (7) | Associated[f] (8) | Dissolved[g] (9) | Underground Storage[h] (10) |
| Arkansas | 1,165,379 | 7,763 | 30,861 | (—)1,755 | 37,881 | 1,164,367 | 522,670 | 332,906 | 303,643 | 5,148 |
| California[j] | 9,026,603 | 305,096 | 72,564 | 2,165 | 513,478 | 8,892,950 | 2,209,179 | 2,093,669 | 4,535,558 | 54,544 |
| Colorado | 1,932,913 | 317,290 | 72,666 | 0 | 69,307 | 2,253,562 | 1,471,797 | 85,687 | 696,078 | 0 |
| Illinois | 253,756 | 5,306 | 2,120 | 662 | 28,279 | 233,565 | 7,501 | 1,000 | 204,600 | 20,464 |
| Indiana | 36,049 | 264 | 0 | 1,280 | 4,482 | 33,111 | 2,402 | 2,100 | 21,865 | 6,744 |
| Kansas | 15,758,332 | 834,214 | 214,995 | 1,629 | 516,090 | 16,293,080 | 15,687,980 | 197,016 | 354,493 | 53,591 |
| Kentucky | 1,286,607 | 41,404 | 8,480 | (—)1,221 | 73,000 | 1,262,270 | 1,184,289 | 0 | 57,883 | 20,098 |
| Louisiana[j] | 36,799,986 | 4,875,622 | 2,450,107 | 0 | 1,690,123 | 42,435,592 | 33,721,943 | 5,845,406 | 2,868,243 | 0 |
| Michigan | 330,100 | 8,464 | 5,000 | (—)7,106 | 10,584 | 325,874 | 46,764 | 18,400 | 54,613 | 206,097 |
| Mississippi | 2,772,683 | 25,340 | 20,945 | 130 | 210,758 | 2,608,340 | 1,835,169 | 479,619 | 292,610 | 942 |
| Montana | 723,731 | 11,401 | 17,048 | 57 | 32,518 | 719,719 | 563,626 | 40,066 | 85,684 | 30,343 |
| Nebraska | 192,946 | 24,802 | 5,200 | 0 | 19,527 | 203,421 | 105,882 | 15,049 | 82,490 | 0 |
| New Mexico | 17,240,669 | 1,620,564 | 254,287 | 13,567 | 544,175 | 18,584,912 | 15,218,048 | 1,635,380 | 1,646,840 | 84,644 |
| New York | 69,362 | (—)2,514 | 1,000 | 11,064 | 3,152 | 75,760 | 34,354 | 0 | 345 | 41,061 |
| North Dakota | 164,025 | 130,188 | 3,077 | 0 | 16,594 | 280,696 | 6,689 | 0 | 274,007 | 0 |
| Ohio | 774,741 | 46,601 | 7,952 | 15,661 | 35,081 | 809,874 | 518,456 | 0 | 37,222 | 254,196 |
| Oklahoma | 12,396,148 | 1,388,178 | 293,842 | 5,269 | 878,698 | 13,204,739 | 6,513,510 | 2,909,723 | 3,694,555 | 86,951 |
| Pennsylvania | 732,163 | 43,529 | 67,048 | 35,253 | 123,604 | 754,389 | 427,175 | 0 | 34,029 | 293,185 |
| Texas[j] | 105,129,062 | 6,164,388 | 1,974,608 | 1,511 | 4,982,021 | 108,287,548 | 67,744,032 | 24,815,726 | 15,712,978 | 14,812 |
| Utah | 387,375 | 1,912 | 49,870 | 0 | 18,261 | 420,896 | 418,599 | 1,636 | 661 | 0 |
| West Virginia | 1,607,290 | 91,634 | 39,725 | 9,989 | 183,739 | 1,564,899 | 1,332,676 | 0 | 56,116 | 176,107 |
| Wyoming | 2,855,071 | 351,472 | 112,546 | (—)1,438 | 121,548 | 3,196,103 | 2,416,351 | 197,816 | 563,518 | 18,418 |
| Miscellaneous[a] | 75,741 | 5,207 | 15,128 | 920 | 5,218 | 91,778 | 66,071 | 0 | 24,787 | 920 |
| Total | 211,710,732 | 16,298,125 | 5,719,069 | 87,637 | 10,118,118 | 223,697,445 | 152,055,163 | 38,671,199 | 31,602,818 | 1,368,265 |

[a] Includes Alabama, Arizona, Florida, Iowa, Maryland, Missouri, Nevada, and Virginia.
[b] Excludes gas loss due to natural gas liquids recovery.
[c] The net difference between gas stored in and gas withdrawn from underground storage reservoirs, inclusive of adjustments and native gas transferred from other reserve categories.
[d] Net production equals gross withdrawals less gas injected into producing reservoirs. Changes in underground storage and gas loss due to natural gas liquids recovery are excluded. Fourth quarter production estimated in some instances.
[e] Non-associated gas is free gas not in contact with crude oil in the reservoirs.
[f] Associated gas is free gas in contact with crude oil in the reservoirs.
[g] Dissolved gas is gas in solution with crude oil in the reservoirs.
[h] Gas held in underground reservoirs (including native and net injected gas) for storage purposes.
[j] Includes off-shore reserves.

# TABLE 2

## ESTIMATED PROVED RECOVERABLE RESERVES OF NATURAL GAS LIQUIDS IN THE UNITED STATES[a]

(Thousands of Barrels of 42 U. S. Gallons)

| | Changes in Reserves during 1955 | | | Reserves as of December 31, 1955 | | | |
|---|---|---|---|---|---|---|---|
| | Reserves as of Dec. 31, 1954 (1) | Extensions and Revisions (2) | Discoveries of New Fields and New Pools in Old Fields (3) | Net Production (4) | Total (Columns 6 + 7 + 8, also Columns 1 + 2 + 3 Less Column 4) (5) | Non-Associated (6) | Associated (7) | Dissolved (8) |
| Arkansas | 46,919 | 307 | 7 | 2,109 | 45,124 | 18,618 | 12,052 | 14,454 |
| California[d] | 330,249 | 24,213 | 1,319 | 30,840 | 324,941 | 0 | 101,761 | 223,180 |
| Colorado | 12,747 | 446 | 50 | 732 | 12,511 | 2,864 | 80 | 9,567 |
| Illinois | 22,220 | (—)1,416 | 181 | 2,528 | 18,457 | 38 | 5 | 18,414 |
| Indiana | 151 | 3 | 0 | 22 | 132 | 11 | 12 | 109 |
| Kansas | 175,197 | 920 | 2,150 | 5,031 | 173,236 | 167,739 | 1,952 | 3,545 |
| Kentucky | 10,740 | 267 | 133 | 2,465 | 8,675 | 8,675[c] | 0 | 0 |
| Louisiana[d] | 884,046 | 65,840 | 24,954 | 38,890 | 935,950 | 733,203 | 153,505 | 49,242 |
| Michigan | 913 | 16 | 25 | 82 | 872 | 234 | 92 | 546 |
| Mississippi | 60,420 | 283 | 416 | 3,243 | 57,876 | 31,124 | 20,607 | 6,145 |
| Montana | 7,179 | (—)33 | 0 | 289 | 6,857 | 0 | 0 | 6,857 |
| Nebraska | 2,268 | 4,516 | 1 | 349 | 6,436 | 5,079 | 945 | 412 |
| New Mexico | 339,991 | 16,264 | 1,288 | 15,336 | 342,207 | 228,226 | 25,082 | 88,899 |
| Ohio | 1,439 | 131 | 14 | 27 | 1,557 | 1,557[c] | 0 | 0 |
| Oklahoma | 333,911 | 43,250 | 6,558 | 29,365 | 354,354 | 122,057 | 53,378 | 178,919 |
| Pennsylvania | 2,869 | 188 | 94 | 127 | 3,024 | 3,024[c] | 0 | 0 |
| Texas[d] | 2,928,137 | 268,695 | 28,661 | 180,132 | 3,045,361 | 1,249,794 | 561,792 | 1,233,775 |
| Utah | 47 | 49 | 17 | 5 | 108 | 92 | 16 | 0 |
| West Virginia | 33,994 | 655 | 218 | 4,341 | 30,526 | 30,526 | 0 | 0 |
| Wyoming | 50,686 | 2,089 | 1,260 | 3,687 | 50,348 | 17,065 | 1,021 | 32,262 |
| Miscellaneous[b] | 334 | 20,477 | 2 | 800 | 20,013 | 0 | 0 | 20,013 |
| Total | 5,244,457 | 447,160 | 67,348 | 320,400 | 5,438,565 | 2,619,926 | 932,300 | 1,886,339 |

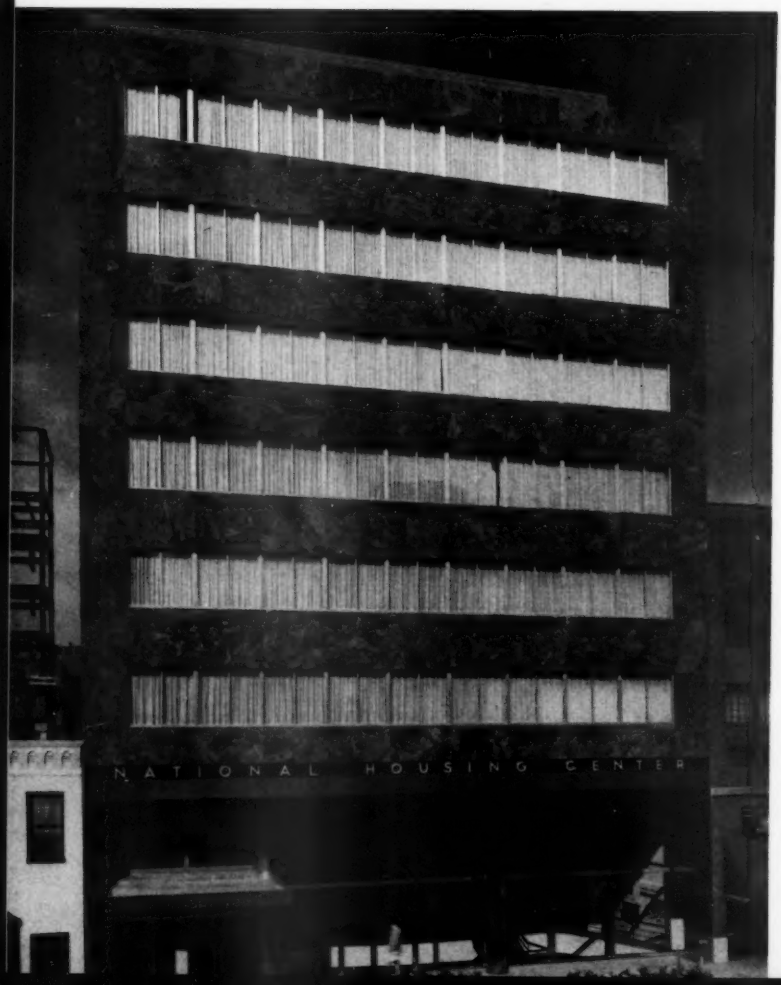
[a] Includes condensate, natural gasoline and liquefied petroleum gas.
[b] Includes Alabama, Florida, and North Dakota.
[c] Not allocated by types but occurring principally in the column shown.
[d] Includes off-shore reserves.

*Exhibits at NAHB's National Housing Center in Washington feature latest gas appliances and gas kitchens*

# Gas on display at housing center

Display by Tracy Kitchens, Inc., is a compact unit of modern gas ap... look

Comfortable Lyons kitchen has sparkling steel equipment with soft ... owners,




A permanent, year-round exhibit featuring handsome New Freedom Gas Kitchens and Laundries and the latest gas appliances for the home, is now on display at the new National Housing Center in Washington, D. C. This impressive all-gas exhibit is the largest unified display at the Center, taking up approximately one-half of the entire third floor.

Situated in the heart of the nation's capital, the eight story glass and steel National Housing Center is sponsored by the National Association of Home Builders, representing all segments of the giant building industry.

Officially opened by Vice-President Nixon last October, the Center brings together for the first time under one roof the latest ideas, materials and appliances that will enable architects, builders and home buyers to select the finest home building components and services that American productivity has to offer.

A dramatic showplace for the great building industry and those who serve it, the National Housing Center will devote six floors to the most modern displays ever created. A central information desk will direct visitors to the various exhibits while trained information specialists, stationed on each floor, will pro-

ors look over gas cooking equipment in second of Tracy Kitchens displays

owners, builders, architects, will find many important displays at Center

Ruud exhibit with cut-out model is included, as are other Center exhibits, in all sightseeing tours of Washington

vide technical information and specifications about the materials and products and answer questions about the applications and use of these materials.

Visitors will find much to interest them. An estimated four million out-of-towners visit Washington each year to tour the many points of interest offered in the nation's capital. This year, the tour will include a visit to the National Housing Center. Some of the things they will see there are built-in devices for both heating and cooling rooms in home or office, disappearing stairways, a garage door that responds to a gadget installed on the dashboard of an automobile, and scores of other exhibits dramatizing the wizardry of today's modern building techniques.

A special area has been set aside for displaying these latest home innovations, which will be constantly varied to maintain fresh interest and keep the public informed on the newest trends in home building.

To be eligible for exhibition at the Center, products must be of good quality; contribute to improvement of the home or its lower cost; contribute to improved health, safety or livability, or demonstrate progress in the home building field.

A five-point program of operation for the new National Housing Center will include:

1. An extensive research program to be carried out largely through the NAHB Research Institute, along these two principal lines: first, to provide accurate and current information on market trends in the planning, construction and equipping of new homes and, second, to field test new building materials and products under normal living conditions as opposed to laboratory testing.

2. A continuing series of educational programs in broad areas of public interest, such as community facilities and urban renewal, for builders and their associates in allied industries. Representatives of business, labor, education, government, and other interested groups, will be invited to participate in these public interest forums. Specialists in all phases of the housing industry will take part in the discussions for the industry programs.

3. A technical library for the housing industry, staffed by professionally trained librarians. Work has already started on assembling and cataloguing books and periodicals to make this one of the finest libraries of its kind in the world.

4. Convenient up-to-date facilities for members of the Washington press corps, and their associates in the periodical, radio and television fields.

5. A series of short courses in sales and merchandising for home builders to be conducted by top-flight sales executives from various industries.

The five beautiful New Freedom Gas Kitchens and Laundries were designed in cooperation with the following cabinet and appliance manufacturers: two by Mutschler Brothers, Inc., two by Tracy Kitchens, Inc., and one by Lyons Metal Products, Inc., featuring modern gas laundry equipment by Bendix and Whirlpool, with Rheem, Ruud and John Wood water heaters. Gas kitchen equipment features Caloric, Tappan and Roper ranges, Servel refrigerators and Hobart automatic dishwashers.

The unified gas exhibit includes individual displays by Suburban Propane Gas Corp., D. W. Whitehead Mfg. Corp., Federal Boiler Co., Norman Products Co., Hydrotherm, Inc., A. O. Smith Corp., Carrier Corp., Rheem Mfg. Co., The Hotstream Heater Co., Ruud Mfg. Corp., The Cleveland Heater Co., The Waterman-Waterbury Co., General Automatic Products Corp., and William Wallace Corp.

*Accident Prevention Course achieves high polish at 10th regional session held in Long Island*

# Safety courses run in high gear

**Quip by Stanley Owens, Transcontinental Gas Pipe Line Corp., gets response from audience of safety men and supervisors from three Long Island gas companies. Mr. Owens is speaking on how to conduct a safety meeting, one topic of the two-day safety course**

More than a year's experience in presenting the American Gas Association's Accident Prevention Course before regional gatherings of gas industry safety men and supervisors has polished the two-day curriculum to near perfection, according to safety experts.

The thematic slogan—"Accidents Don't Happen—They are Caused"—has been brought with increasing force and vigor to gas industry groups since the course was first prepared under the auspices of the Accident Prevention Committee.

"Accident Prevention Through Informed Supervision" has now been conducted ten times. Sixty-five companies have sent 329 superintendents, supervisors and foremen to courses held in Amarillo, Texas; Wichita, Kan.; Ft. Dodge, Iowa; Rockford, Ill.; New York, N. Y.; Pittsburgh, Pa.; Newark, N. J.; Boston, Mass.; Lincoln, Neb. and Forest Hills, New York.

Marvin Travis, safety director, Northern Natural Gas Co., has participated as an instructor in four different courses. Charles Williams, safety director, The Gas Service Co., Kansas City, has participated in three different schools. Ernie Beaumont, director of safety, The Peoples Gas Light & Coke Co.; E. C. Baumann, safety engineer, gas department, Public Service Electric & Gas Co.; V. A. Howell, senior safety coordinator, Long Island Lighting Co.; and A. L. Dowden, supervising engineer, public utilities, Liberty Mutual Insurance Co., have acted as instructors during two courses. Seventeen other members of the Accident Prevention Committee have instructed during one course.

The tenth of these accident prevention courses was conducted at the Forest Hills Inn, Forest Hills, N. Y., March 7-8.

The instructors for the course were: Mr. Baumann; Stanley Owens, director of safety, Transcontinental Gas Pipe Line Corp., Houston, Texas, and George Ruoff, safety director, Central Hudson Gas & Electric Corp., Poughkeepsie, New York. R. N. Papich, A. G. A. safety consultant, acted as an instructor and coordinated the various aspects of the two-day presentation. In attendance were supervisors from Long Island Lighting Co., The Brooklyn Union Gas

Co., and Brooklyn Borough Gas Co.

At Forest Hills, the course got off to a very effective start by using the "jolt" technique in presenting graphically just where the gas industry stands in the over-all accident prevention picture in the United States. The part supervisors play in attaining this position was driven home pointedly.

Mr. Papich spoke for 50 minutes on exactly what constitutes the basic philosophy of accident prevention, showed that accidents don't happen but are caused, and that accident occurrence follows a definite logical pattern. It was stressed that the injury is only one of a number of factors found in every accident. In other words, the accident causes the injury, the unsafe acts and unsafe conditions cause the accident, and the faults of persons are caused by the heredity and environment of the worker. Accident prevention, he said, is really a science based on natural phenomena.

After a ten minute break, Mr. Baumann proceeded to tell how a safety program is organized. He stressed one point in particular—that an effective safety program is the result of a cooperative effort of all employees, from the president right on down to the last employee, to control accidents.

Luncheon was served in an adjacent room for just one hour, with the meeting resuming promptly at one o'clock. Mr. Owens launched right into his topic—how to talk safety effectively. His positive approach brought out that communication is an absolute necessity in transferring information, ideas or direction. The easiest method known to man to date is by talking or speaking, and he summed up the rules of effective speaking succinctly by recommending, "Stand up, Speak up and Shut up!"

A 35mm sound slide film, "The Key to Good Speaking," gave a very interesting and detailed account of how to effectively prepare a talk.

After another break, Mr. Ruoff spoke on the vital part that supervisors play in one of the basics of effective accident control—accident investigation and analysis. He summed up his presentation by saying that the sole objective of every accident investigation and analysis is to prevent future accidents. The aim is to eliminate the cause or causes—not the man. Another 35mm sound slide film was used to further emphasize the importance of accident analysis.

Stan Owens returned to the rostrum to cover another basic principle of accident prevention—fact finding through an effective accident report form. A typical gas company report form was used as an example and each part was discussed from the standpoint of necessary information for effective and intelligent analysis in order to prevent future accidents.

Here again, Mr. Owens stressed the importance of corrective action being based on facts. The best "tools" available to get these facts, are a good accident report form and an informed supervisor. A 35mm sound slide color film was presented stressing accident report forms.

The first day's session closed with a discussion of methods or techniques to get safety practices accepted by employees. A different technique was used during this presentation. All day, the group was being talked to; now they were encouraged to do the talking based on their own experiences and from their very recent exposure to some of the basics of accident prevention.

Two detailed accident case histories were shown in the form of a 35mm sound slide film entitled "The Case of the Careless Truck Operator" and "The Case of the Unprotected Eyes." The film gave the essential background and facts leading up to each accident. Then the film was stopped, and the group was asked to analyze the case based on the facts shown. Their comments were listed on the blackboard under separate headings of "Causes" and "Prevention."

After a rather animated and vociferous discussion by the group, the actual results of the accident were shown to the group. Every recommended suggestion shown in the film was also brought out in the discussion prior to viewing the solution. The technique of viewing, discussing and reviewing the results of the

y points in understanding people are discussed E. C. Baumann, Public Service Electric & Gas

Exhibits of Central Hudson Gas & Electric programs are displayed by George Ruoff, company safety director

How accidents are caused is opening topic of two-day course; R. N. Papich, A. G. A., speaker

Delegation of supervisory force from Brooklyn Borough Gas was led by George Scott (far right). Shown on table is part of supplementary material provided for study

Three supervisors talk over safety problems during coffee break, provided twice daily to ease strain of rigorous sessions and to encourage informal discussion

Stanley Owens, an instructor, poses with group attending course from The Brooklyn Union Gas Company. Company's safety director is Thomas Gray, fourth from right

case histories was followed throughout the remainder of the discussion and the first part of the following day when the case histories of "The Five Unrelated Accidents" and "The Case of the Three Related Accidents" were put through the same routine.

One of the highlights of the course was Stan Owens' presentation on "Planning and Conducting a Safe Operations Meeting." During his talk, everyone was shown in detail how to plan, organize and conduct a really effective safety meeting. Detailed agenda, report forms, etc., were distributed to the group. Here

*(Continued on page 32)*

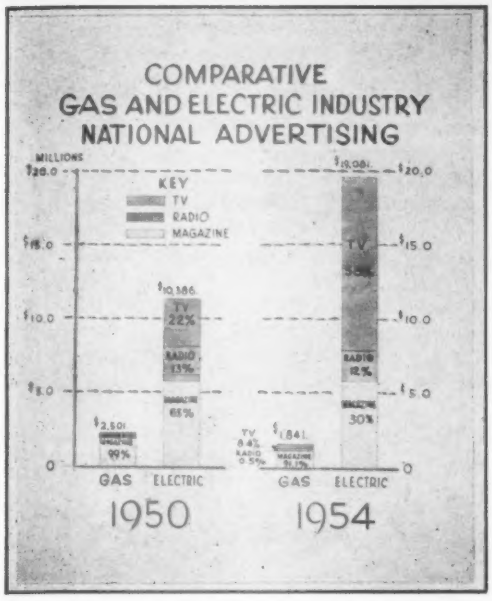
## What they say—

● . . . presents the subject informatively, thoroughly and with such interest that the supervisory participants are stimulated to more enthusiastic cooperation in their local safety programs.—Ernest S. Beaumont, director of safety, The Peoples Gas Light and Coke Company.

● My company safety director has been trying to tell me for two years that safety and operations must be combined if good production is to be achieved. I never quite believed him but this course firmly convinced me.—A. Fuhrman, general foreman, Milwaukee Gas Light Company.

● . . . I never attended a conference where there was such a high concentration of truly worthwhile material given in one package.—F. X. Phelan, safety supervisor, Central Illinois Electric and Gas Company.

● Speakers from other companies gave us an insight into the methods used elsewhere. . . . The men on the program were exceptionally good speakers and did an effective job of passing their knowledge of accident prevention on to us. . . . They laid the operation of a safety program squarely in the laps of the supervisors and gave us the know-how and tools for making a program work. . . . The gas industry standing is rather startling when we were told that 88 per cent of our accidents are of the type common to other industries and only the remaining 12 per cent are attributable to gas hazards.—Comments of Central Illinois Electric and Gas personnel attending course.




Electric industry now spends more than half of its advertising dollars on TV, compared to 22 per cent in 1950

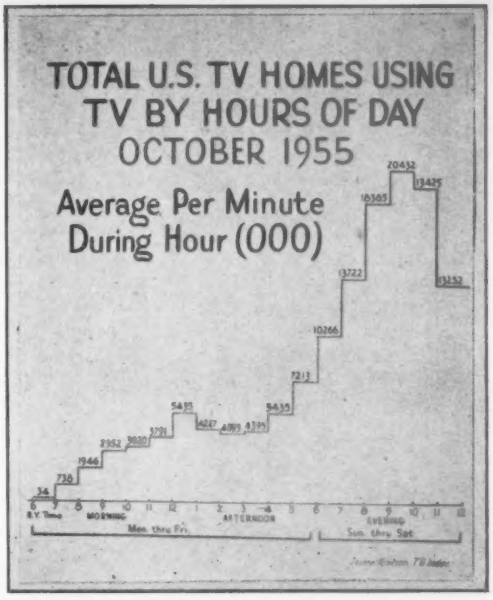



Chart above shows size of television audience at various times of the day, with the largest during Class A time

# Industry asked to back TV show

By FRANK H. TREMBLY

*Chairman, National Gas Industry Television Committee*

For the first time in its long history, the gas industry has squarely before it a practical, workable plan for a national television program. Our industry is faced with a decision over the next several months that will affect its growth and prestige for years to come. We have to decide whether or not as an industry, now or in the future, we will become a sponsor of national television.

This program that I will briefly present has been prepared by the National Gas Industry Television Committee and has been approved and recommended by the General Promotional Planning Committee, the PAR Committee and the board of directors of the American Gas Association. Never before has such endorsement been placed behind an industry television program. In addition, the National Television Committee has been assigned the responsibility of obtaining utility subscriptions of approximately two million dollars for the first year to produce such a program.

This is probably the greatest responsibility ever given to an A.G.A. committee —to raise two million dollars in five months, in addition to present PAR funds, for a television program, the exact nature of which will not be known until months after the utility subscriptions have been obtained. Notwithstanding the difficulties that this presents, the committee feels confident that the funds will be subscribed and has eagerly accepted this responsibility. There are some very good reasons why this program should be successful at this time.

In the past six years, television has come of age. An indication of the importance of television is the advertising dollars that are annually spent in it. In 1955 more than one billion dollars were spent by various advertisers in promoting their produce or service over television. [*Mr. Trembly then showed a number of charts depicting the growth of television since 1949—Ed.*]

The electric industry has been actively in television for many years and is today spending over one-half its national advertising funds in this medium. A comparison between electric and gas industry advertising for the calendar year 1955 compared to 1950 is shown above.

As the sixth largest U.S. industry, it is unthinkable that we would continue to be unrepresented in such an important and accepted advertising medium.

The gas industry is today at the highest earning level in its history and if it ever could afford a national television show, it can today. There is no question but that from a financial standpoint, the industry is amply prepared economically to sponsor a national television program.

There is no substitute for the volume audience provided by Class "A" time national television. Our chart shows the size of the television audience nationally at various hours of the day and night. The striking difference between Class "A" and other time periods speaks for itself.

Prepared for presentation at the New England Gas Association, March 23, 1956, Boston, Massachusetts.

There has been over the past year a very strong ground swell of gas industry interest in national television. This was clearly expressed in the 1955 Spring Executive Conference, in various industry meetings and conferences and in the several meetings of the PAR Committee and the Board of Directors, when this subject was discussed. From the standpoint of industry interest, we are at the moment at a peak that has never been reached in the past and may not again be reached in the future.

Repeated surveys have shown that the gas industry is at present losing the battle for the cooking load. These surveys have shown, that while from possibly 80 per cent to 95 per cent of homes within reach of gas service now use gas ranges, the future preference of these same customers for electric ranges is from 25 per cent to 75 per cent. The electric industry is rapidly capturing the future preference of our cooking customers and it is high time that we do something about it.

The need for national gas industry promotion, particularly in the residential field, is greatest today; and there is no question but that a dramatic national television program would be our best means of favorably impressing our customers.

The gas industry's television requirements and needs have been completely thought out by the Television Committee, by the General Promotional Planning Committee and by the A. G. A. staff; and have been cleared through the highest controlling bodies in the Association, namely, the PAR Committee and the Board of Directors. Their recommendation is for a two million dollar annual national television program, information about which will be given later in this presentation.

If this program is not accepted now, it will be too late to accomplish its purpose. We have reached a coincidental peak of industry interest, ability, and need, that may not occur again. History has repeated itself many times, and like Caesar 2,000 years ago, the gas industry is today squarely facing its Rubicon. Either we cross and subscribe to a national television program, or we do nothing, and with resignation say that we will not fight for our future. I am personally convinced that if we do not subscribe to a national television program under today's very favorable conditions, the industry will never have a national television program in your lifetime or mine.

The precedent established by the industry's failure to undertake a program under these extremely favorable conditions, would haunt the industry for years to come. It can be truly said of the gas industry at this time, as was said by Shakespeare in *Julius Caesar,* "There is a tide in the affairs of men, which, taken at the flood, leads on to fortune." Fully, and beyond a doubt, the flood tide for a national gas industry television program has arrived.

As planned by the Television Committee, a national gas industry television program would be the alternate-week sponsorship of a highly rated popular show, presented over about 100 stations nationally either by NBC or CBS. It would be either a show of this type or one of equal rating and benefit to the industry, depending upon what becomes available. It would provide a large viewing audience and would bring desirable prestige and recognition to the industry. The program cannot be more definitely spelled out at this time, as until the committee has at least two million dollars of firm commitments in hand, it cannot go on the market to contract for a show.

The cost per thousand viewers would be comparable to other national television shows and the cost for each television market would be in proportion to the number of television sets reached. The gas industry is currently spending about $2\frac{1}{2}$ million per year on local television shows; and 137 utilities with over 15 million meters, that are now spending $1,850,000 per year on local TV, have indicated a willingness to participate in a national television program.

This strong degree of utility interest in local television is one of the reasons I believe that this national television program will be successful. In some cases, the national program would be in partial

*(Continued on page 36)*

# Name judges for Mrs. America national finals, May 6-12

a PAR activity

SELECTION of the new "Mrs. America" will be made on May 12, 1956, at Daytona Beach, Fla., by a panel of seven judges whose appointment has just been announced by W. W. Selzer, A. G. A. sponsor of the national gas industry promotion.

Judges for this year's contest are Marian Manners, home service director and special feature writer for the Los Angeles *Times;* Josephine McCarthy, director of home economics for the National Broadcasting Co.; Arthur William Brown, well known illustrator; Russell Patterson, famous artist and interior decorator; Isabel McGovern, director of the *Herald-Tribune* Kitchen and special food writer; Mary Rokahr, head of the Department of Home Management, School of Home Economics, University of Connecticut; and Iris Davenport, editor, women's department, *Farm and Ranch* magazine.

Mrs. America will be judged on her homemaking abilities, attractive appearance and active participation in church and community affairs. To make certain that these requirements, rather than beauty, are strictly adhered to, each contestant is carefully screened at the local, state and national level, before the final selection is made.

Entry blanks can be obtained from participating gas companies and designated cosponsors. So far, gas companies have distributed more than 250,000 entry blanks. City, county, and state homemaking contests, consisting of cooking, baking, menu-planning, sewing, washing and ironing competitions, will be held throughout the country in gas company auditoriums during the months of March and April. Judging will be done by outstanding home economists.

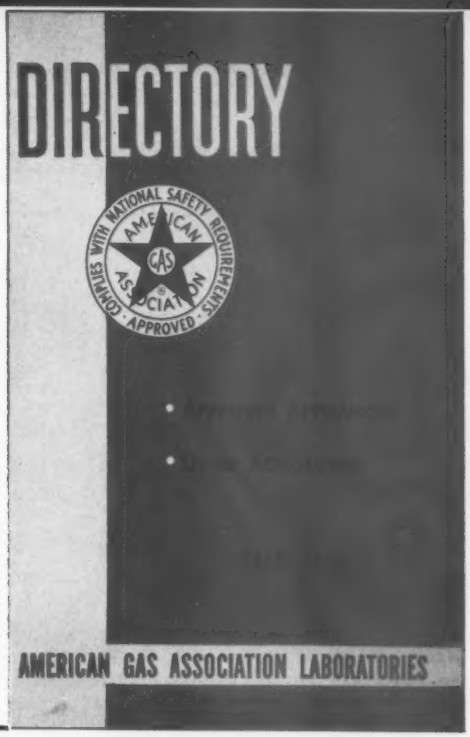
These state finalists and their husbands will live in identical homes on Mrs. America Drive at Ellinor Village, Fla., during the finals. Daily assignments will be given over a five day period during which time the panel of seven judges will observe contestants' homemaking abilities, rating them individually on food preparation, menu-planning, and general housekeeping. Neatness and careful grooming, rather than beauty and sex appeal, are what the judges look for.

Between assignments, contestants and their husbands will be entertained at teas, parties, dances and banquets. Swimming and golf are among the favorite recreational activities. Plenty of time, however, is allowed for rest.

On May 12, the judges will select the new Mrs. America. As ambassadress of good will for the gas industry, she will appear at home shows, conventions, and on radio and TV throughout the year. She will typify the American wife and mother who manages a happy home, raises a family, participates in community affairs and maintains her attractive appearance at all times.

Among the many valuable prizes that will be hers are a New Freedom Gas Kitchen and Laundry, a two-week vacation at Ellinor Village with her husband and children, a four-week vacation in Europe with her husband, a new DeSoto car, and additional prizes of clothing, food and equipment. These prizes plus personal appearance fees will come to more than $20,000.

# Issue new edition of A. G. A. Directory




During February, over 3,700 copies of the Directory of Approved Appliances and Listed Accessories were distributed—almost double the number of copies issued a decade ago. The publication is a valuable and authoritative guide to approved equipment and is issued by the American Gas Association Laboratories.

The Directory provides up-to-date listing of all models of gas appliances and accessories which are currently certified by the A. G. A. Laboratories. Only those current models are listed which have been found by test to comply fully with the gas industry's standards for safe operation, durable construction and satisfactory performance.

The Directory contains information which will be of assistance in making proper installation of the appliance in the field. Information is published indicating the type of appliance, type or types of gases and burner input ratings for which the appliance model has been approved.

Also given are the minimum clearances required between the appliance and adjacent combustible construction which corresponds to the minimum clearance found satisfactory by test at the Laboratories. In the case of accessories controlling gas flow, the capacity ratings are shown. Other items of information of interest to the gas industry are also included.

The history of the Directory since the first issue in 1927 is a history of growth. Prior to that date, equipment tested and approved by the Laboratories was published as a list in the A. G. A. MONTHLY. In the October, 1925, issue of A. G. A. MONTHLY, listings appeared for the first time for four types of flexible gas tubing, commonly known today as gas hose. The first listings for domestic gas ranges appeared in the June, 1926 issue.

## Issued in 1927

Space in the A. G. A. MONTHLY, however, did not permit continuation of such listings. In 1927, the Directory became a separate publication and contained 15 pages. It listed 47 manufacturers of domestic gas ranges, 14 manufacturers of space heaters and eight manufacturers of flexible gas tubing.

In contrast with the first edition, the 1956 semi-annual issue of the Directory requires 819 pages to list all approved equipment of 737 manufacturers, distributors, jobbers and dealers. Listings are shown for over 40 types of products for which American Standards have been developed.

Before the manufacturer may have his appliance model listed in the Directory, a prototype model must undergo extensive tests at the Laboratories. Facilities for testing gas equipment are located at Cleveland, Ohio, and Los Angeles, California. The Laboratories' experienced appliance testing engineers, employing the most modern of scientific equipment, thoroughly examine the design and construction of each model as well as all components.

Tests are performed to check completeness of combustion, satisfactory operation of burner and pilot, safe temperatures on adjacent combustible surfaces, gas leakage, and many other items as specified by the gas industry's standards of performance. In addition to tests covering safety, an examination is made to assure ease of servicing and repair, adequate durability of construction and acceptable performance.

For example, performance tests of domestic gas ranges include the baking of single layer cakes in the oven and toasting of bread in the broiler to assure acceptable heat distribution. In addition, speed of oven preheat, thermostatic control operation, and top burner efficiency are included in the approximately 175 construction and performance specifications applied to gas ranges.

The approval standards also require detailed examination of electrical con-

*(Continued on page 32)*

# Industrial relations round-table

*Prepared by*
*A. G. A. Personnel Committee*

**Edited by W. T. Simmons**
**Assistant to the Personnel Manager**
**Philadelphia Electric Company**

● **Executives get culture**—Don't be startled if you see one of your operating friends studying a painting in the Chicago Art Museum, or attending a reading of Robert Browning's poems. He's probably following the advice of Earl G. Planty's thesis for industrial executives: If you'd improve your understanding of yourself and others, then learn to enjoy poetry, drama, music, and the fine arts.

Since Mr. Planty wrote the book "Developing Management Ability" (Ronald Press), and made a national reputation as Johnson & Johnson's executive counselor, we're taking him seriously. Planty, now a professor at the University of Illinois' College of Commerce and Business Administration, warns that industrial managers tend to over-concentrate their interest in the special area of their own experience. He advises: "A man who has learned to enjoy a poem or a play is more relaxed at his leisure and more alert on the job." So bring on your William Shakespeare!

● **An experience in the hiring of the blind**—For the past 12 years the Friction Division of the Thermoid Co., Trenton, N. J., has used some blind employees in the plant. Mr. A. A. Runkle, factory manager of that division, states that he had had nine blind employees, five of whom are still working there. Their employment has been restricted to working on twin-spindle drill presses. He indicates that the ideal job for the blind person in a plant is one that is permanent, where the work flows steady, the set-ups are provided by specialists, and the raw and finished stocks are moved to and from the work place by material handlers. These are the conditions on the drill press job for both sighted and sightless workers.

Experience indicates that these blind employees have nearly a perfect safety record; are very punctual and regular in their attendance; and are easy to get along with.

Mr. Runkle has found five easy rules for getting along with handicapped employees: Avoid special considerations; make them earn their way; do not treat their jobs as a gratuity; hire only those well adjusted to their handicap; and keep in mind that blind people are more normal than most of us think.

● **Blind inspectors**—Here is another job for blind workers in industry. Now they can work as inspectors in precision gauging—measuring accurately to 0.0002 inch. It's done by hooking up a sound amplifier to an electronic gauge. Frank Dedek, methods research supervisor at Burroughs Corp., Detroit, designed the gadget. He got the idea after he developed an automatic assembly line that displaced two blind girls.

The operation is simple. The worker inserts parts into a measuring anvil; if the part is undersized, a low-pitched tone sounds in a tiny ear microphone worn by the worker. An oversized part registers as a high-pitched tone. Parts meeting specifications produce no sound at all.

Engineers can see no reason why the same principle cannot be extended to multiple gauging, using notes of the standard musical scale as indicators. And they say that by using Mr. Dedek's method most industrial gauges can easily be adapted for use by the blind at relatively low cost.

Burroughs is not in the gauge business, but will be happy to provide blueprints and any other pertinent information to responsible groups who want to help the blind in industry.

● **Giveaways that give**—Management spent $3-million last year on employee education via reading racks. Was it worth it?

"Yes," say 83 per cent of the 700 executives who answered this question in a survey just made by *Industrial Relation News*, "We feel it is money well spent."

Where do the books do the most good? Improving morale (say 23 per cent of the respondents); improving appreciation of the free enterprise system (22 per cent); creating confidence in management (17 per cent).

Where were the pass-outs least effective? In dealing with specifics, such as cutting absenteeism and tardiness, and increasing production. Less than 3 per cent of the respondents found reading-rack booklets valuable in these areas.

How do employees react to the program generally? Over 70 per cent of the companies queried felt that employees responded favorably to the reading rack.

If you'd like to know more about the data uncovered by this survey, copies of the summary are available for $55 from *Industrial Relation News* at 230 West 41 St., New York.

● **The trend is to vend**—Especially hot foods. You may be glad to know about the coin-operated canned-soup dispenser developed by Campbell and The Vendo Co. (7400 East 12 St., Kansas City, Mo.). The new machine holds 210 eight-ounce cans and dispenses three kinds of soups at 150 F.

● **Benefit plans need help?**—An annoying thing about many employee benefit plans is that employees take them for granted. This despite advance publicity, lavishly illustrated booklets, and the like. National Metal Edge Box Co., Philadelphia, has an idea for packaging benefit booklets so there's a good chance they'll be retained at home—instead of discarded after a cursory reading.

Metal Edge puts the booklets in a specially designed reinforced cardboard file box, 9 x 11½ x 1½ inches. It has a removable tray so other important employment papers—group insurance policy, etc.—can be kept in the same place. Packaging this way not only makes papers permanently available for a worker's reading and reference, but also makes a substantial impression on the rest of his family.

● **Priority on 19-25 unmarried group under new draft order**—Selective Service regulations are amended to concentrate draft calls on unmarried men in the 19-25 age bracket, with the expected effect that married men and those over 26 will be practically out of reach of induction unless draft calls are increased substantially. President Eisenhower makes the amendments official in signing Executive Order 10659.

The amendments set up four categories of draft registrants, with first call in the 19-25 category, the calls to start with 25-year-olds on down the list to the 19-year-old group.

The new draft order does not disturb the present option of those under 18½ who may enlist in the National Guard or in the ready reserve programs.

The order provides that in accordance with the 1955 Reserve Forces Act, any registrant who has been commissioned in a reserve component but is not ordered to active duty, will be deferred from induction so long as his performance as an officer in the ready reserve is satisfactory. It also provides that those who enter ROTC and other officer procurement programs are required, in order to be deferred from the draft, to remain members of a regular or reserve component for six years after commissioning, instead of eight years as previously.

Another feature of the order is that registrants who have enlisted in National Guard or reserve programs, but who fail to serve satisfactorily, will be subject to induction for regular 24-month service.

● **Personnel to operate computer**—If you are thinking about the use of the modern electronic data-processing machine called the computer, out of which pours rapidly and systematically a stream of controlled information for management, you will be developing employees for new job classifications which, up to now, have not existed in industry. To mention a few:

(a) Systems analysts will be your top specialists in this field. They should be able to think logically in abstract terms, should know business systems, computer equipment, company policy, have superior intelli-

*(Continued on page 36)*

# Househeating continues rise

By Bureau of Statistics

*American Gas Association*

The gas utility industry added 1,439,000 new househeating installations during the 1955-1956 heating season and expects to add during the next three heating seasons more than 3.8 million new installations. This will bring the total number of gas-heated homes to 19.2 million by December, 1958.

At the end of 1955 there were 15.4 million homes heated by gas, equivalent to 57.5 per cent of all residential gas consumers. Of more significance is the fact that existing heating customers represented 69.2 per cent of all residential users considered to be part of the potential market for gas househeating.

The number of expected incremental gas heating customers for the next three heating seasons indicates a continuation of the post war trend in the preference of the American public for gas heat. The implications of this, from the utility standpoint cannot be over emphasized since it has been shown, based on previous studies, that obtaining the gas heating load is basic to higher frequency of installation of other gas-consuming appliances within the household.

The East North Central states will show the most significant gains during the next three heating seasons, where approximately 1,035,000 new heating customers will be added, increasing the number of heating customers in this area by 38 per cent. In Middle Atlantic states, additions of 491,000 gas househeating customers are anticipated during this same period, increasing heating cus-

## EXISTING AND POTENTIAL U. S. GAS HOUSEHEATING CUSTOMERS

(OCTOBER 31, 1955, ESTIMATED GAS HEATING INSTALLATIONS DURING NOVEMBER AND DECEMBER 1955 AND ESTIMATED GAS HOUSEHEATING CUSTOMERS AS OF DECEMBER 31, 1955)

(Thousands of Customers)

| | Existing Residential Customers October 31, 1955 | | Estimated Number of Gas Installations During November and December, 1955 | Estimated Gas Househeating Customers as of December 31, 1955 | Potential Residential Househeating Customers[a] |
|---|---|---|---|---|---|
| | Total | Househeating | | | |
| United States | 26,702 | 15,076 | 354 | 15,430 | 22,338 |
| New England | 1,553 | 158 | 7 | 165 | 940 |
| Middle Atlantic | 6,836 | 1,734 | 47 | 1,781 | 4,836 |
| East North Central | 5,964 | 2,719 | 132 | 2,851 | 4,821 |
| West North Central | 2,092 | 1,482 | 35 | 1,517 | 1,828 |
| South Atlantic | 1,946 | 1,105 | 26 | 1,131 | 1,681 |
| East South Central | 1,020 | 815 | 13 | 828 | 976 |
| West South Central | 2,912 | 2,903 | 33 | 2,936 | 2,911 |
| Mountain | 805 | 758 | 22 | 780 | 785 |
| Pacific | 3,574 | 3,402 | 39 | 3,441 | 3,560 |

[a] Including customers already using gas for househeating.

## ANTICIPATED ADDITIONAL GAS HOUSEHEATING CUSTOMERS, 1956-1959

(Thousands of Customers)

| | 1956-1957 Heating Season | | | 1957-1958 Heating Season | | | 1958-1959 Heating Season | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | New Dwelling Units | Existing Dwelling Units | Total | New Dwelling Units | Existing Dwelling Units | Total | New Dwelling Units | Existing Dwelling Units |
| United States | 1,402 | 830 | 573 | 1,247 | 780 | 467 | 1,181 | 769 | 412 |
| New England | 43 | 9 | 34 | 45 | 10 | 35 | 46 | 11 | 35 |
| Middle Atlantic | 181 | 85 | 96 | 158 | 77 | 81 | 152 | 72 | 80 |
| East North Central | 449 | 169 | 280 | 310 | 135 | 175 | 276 | 134 | 142 |
| West North Central | 120 | 60 | 61 | 131 | 57 | 74 | 117 | 55 | 62 |
| South Atlantic | 102 | 76 | 26 | 97 | 72 | 25 | 94 | 68 | 26 |
| East South Central | 61 | 37 | 24 | 54 | 36 | 18 | 51 | 35 | 16 |
| West South Central | 151 | 139 | 12 | 156 | 145 | 11 | 158 | 149 | 9 |
| Mountain | 65 | 53 | 12 | 60 | 50 | 10 | 59 | 50 | 9 |
| Pacific | 230 | 202 | 28 | 236 | 198 | 38 | 228 | 195 | 33 |

tomers by 28 per cent. New gas heating installations in the New England area will aggregate 134,000 units, an increase of 85 per cent over the 158,000 homes presently gas-heated in this region.

New home construction during the next three heating seasons will account for 62 per cent of the new gas heating installations, with the remainder representing conversions of existing homes. Anticipated continuation of high new construction levels argues well for the maintenance of significant new additions to gas heating customers. Conversions of existing dwelling units continue substantially to exceed new homes as a source of additional heating customers in both the New England and East North Central regions.

As of October 31, 1955, there were 72 utilities, serving 6.7 million residential customers (equivalent to about 25 per cent of all households served by the industry) which still had in effect some restrictions on new heating installations. Two years ago there were 88 utilities, serving 9.1 million families who were in a similar position. Increasing supplies of gas and greater utilization of underground storage facilities have been responsible for this improvement; it is expected that the frequency of restrictions will be further reduced in the near future.

Data shown in this survey represent industry totals based upon reports received from 313 companies serving 24.6 million residential gas users throughout the nation, equivalent to 92 per cent of the industry. Utilities were requested to indicate the ultimate potential for gas househeating among their existing residential users. Many such customers occupy units in multi-family structures, generally served by one central heating unit, which are considered to be either physically not adaptable to gas heating, or in which even the most favorable prospective gas price would still be sufficiently disadvantageous to anticipate its use.

Data relating to potential heating customers reflect these two limiting factors and furthermore they exclude the potential market to be created by new construction in the future, and by the initiation of gas service in existing housing not currently using gas for any purpose. (For space reasons, tabulation of customers by states have been omitted on the preceding page. State figures may be obtained from the Bureau of Statistics—Ed.)

# Twelve utilities will launch unified gas range campaign

TWELVE utility companies, serving 1,750,000 residential customers in seven states, will kick off one of the gas industry's largest unified promotions of the year when they launch a combined 1956 Spring Matchless Gas Range Campaign on April 9.

Sponsoring the campaign are: Equitable Gas Company and The Peoples Natural Gas Co., both of Pittsburgh; and all companies of The Columbia Gas System, Inc.

Columbia System companies are The United Fuel Gas Co., Amere Gas Utilities Co., Central Kentucky Natural Gas Co., Virginia Gas Distribution Co., Manufacturers Light & Heat Co., Cumberland and Allegheny Gas Co., Binghamton Gas Works, Keystone Gas Co., Ohio Fuel Gas Co. and Natural Gas Company of West Virginia.

Cooperating in the campaign will be ten gas range manufacturers, each of whom will benefit from a full week of exclusive promotion. It is estimated that more than 3,700 dealers will participate.

More than a million lines of newspaper advertising will be run in 71 daily and 196 weekly papers during the ten-week period, which ends June 16. Heavy television and radio advertising schedules will center around programs already sponsored by the gas utility companies in their various areas. The campaign will cover substantial portions of Kentucky, Maryland, New York, Ohio, West Virginia and western Pennsylvania, and important parts of Virginia.

More than $43,000 worth of prizes will be poured into a dealer-salesman contest, with the top prize each week being a DeSoto Seville hardtop. In addition, there will be second and third prizes each week of $200 and $100 savings bonds, and ten daily prizes of $10, six days a week. Colors of the automobiles will be "gas flame blue" and white.

Magic Chef ranges will be featured in the first week of the promotion. Roper will follow the week of April 16; Universal, the week of April 23; RCA Estate, the week of April 30; Norge, the week of May 7; Kenmore (Sears, Roebuck), the week of May 14; Caloric, the week of May 21; Maytag, the week of May 28; Tappan, the week of June 4; and Florence will wind up the campaign the week of June 11.

To become eligible for any of the sales contest prizes, a salesman must fill out a sales report card for each participating gas range sold.

The card must contain the name and address of the purchaser, date of sale, brand and model, name and address of dealer and signature of the salesman.

Each day the cards received at contest headquarters in Pittsburgh will be accumulated and the names of the ten daily prize-winning salesmen will be drawn. At the end of a week, all cards received during the week will be pooled and the three grand prize winners drawn. Only the ranges which meet "Matchless" standards will qualify for the grand prizes.

Before the prizes are actually presented, the sales report cards will be checked to make sure that all requested information has been filed. Then the dealership will be checked for special interior and window displays, two of the requirements for prize eligibility.

All of the range manufacturers are contributing equally toward the prize fund, with the gas companies making up the difference.

As a traffic builder, dealers will be able to offer women's stretch nylon hose by Lilly Dache at 79 cents a pair instead of the retail price of $1.65 a pair. These hose will be available only at dealers' stores and display rooms.

Participating dealers are being provided with complete point-of-sale display packages, emphasizing the "Matchless" theme. The packages contain wall and window banners, range feature stickers, pennants, mobile displays, three-panel background displays and traffic builder banners.

A total of 67 dealer contact men, employed by the gas companies, are visiting dealers to stimulate interest in the promotion and assist with displays. More than 100 home service representatives will cooperate with key dealers in putting on store demonstrations and other similar promotions.

Ketchum, MacLeod & Grove, Inc., of Pittsburgh, is the advertising agency handling the campaign.

## Plan West Coast meeting

● On June 5 and 6, 1956 American Gas Association and Pacific Coast Gas Association will sponsor a West Coast Research and Utilization Conference. The meeting will be held at the Ambassador Hotel, Los Angeles, California. A committee under H. W. Geyer, director, West Coast Research Laboratories, Robertshaw Fulton Controls Co., Chairman, is planning the conference. Guy Corfield, research engineer, Southern California Gas Co., is in charge of program development.

Aimed at utility executives, utilization, service and technical personnel and manufacturer executives and engineering staff, the conference is emphasizing West Coast area considerations.

# Economics and appliance sales

By BUREAU OF STATISTICS
*American Gas Association*

The possibility of deriving a formula that can express the relationship between what consumers earn and what they spend has always intrigued economists, manufacturers and distributors.

A mathematical equation that determines without ambiguity the level of sales that is warranted by any given combination of national income, prices and/or any other economic variables would prove an invaluable tool to, let us say, sales forecasting. It would provide an objective estimate of the minimum-to-maximum range in probable future sales totals, based upon the highest and lowest levels of future income deemed likely to occur.

The value of such unbiased forecasts to long-range production, expansion and promotion plans is clear. Such an equation in sales analysis would provide an objective measurement of the improvement in sales that could be attributed to special industry development and promotion activity.

Any difference between actual sales volume and the sales volume that would be warranted by income level (according to the equation) would represent the effect of industry's effort. When income is contracting sharply, a modest decline in sales may well indicate the signal success of a promotion campaign which persuaded people to buy who otherwise would not have been in the market for a given appliance.

This memorandum represents an attempt to develop several alternative equations to describe probable future national range sales, based upon the historical relationship between such sales and income. Similar analyses could readily be performed for other appliances. For reasons explained subsequently, the range has been chosen as illustrative of the necessary techniques.

Although national estimates are of vital significance to both the utility industry and appliance manufacturers, and particularly in the relations of both industries with the financial community, many utilities may desire to undertake the computation of sales—income relationships, for their own service areas, to aid local management planning. The techniques and discussions contained herein for the national analysis may be useful in preparing comparable local studies. Of course, the following equations cannot be interpreted as applicable to any set of local circumstances.

A number of related consumption measures have been developed by the U. S. Department of Commerce, the National Bureau for Economic Research and others in pursuit of reliable forecasting formulae. Among the better known of these are the co-efficient of income sensitivity and the co-efficient of income elasticity.

## Two co-efficients

The co-efficient of income sensitivity is found in an equation (derived through standard statistical methods) which expresses the total dollar amounts spent by all consumers in terms of the total dollar income received by consumers. The co-efficient of income elasticity, on the other hand, measures changes in total number of units consumers buy in relation to the amount of income they have available and the prices they have to pay for the items they buy.

All of these consumption functions are based entirely upon a mathematical analysis of the historical relationship between the variables involved. To use them for analysis and prediction assumes by implication that income levels or income changes will continue to influence sales in the future exactly as they have in the past.

Considering the fact that predictions for the post-war years based upon such equations have been greatly in error, that assumption is questionable. It has been suggested these equations represent an average of sales responsiveness to cyclical up-and-down trends in income, when there are alternating periods of rapid satisfaction of put-off demands and postponement of needed purchases.

In that case, the average would tend to underestimate demand in periods of rapid expansion and overestimate in times of decline or moderate increase.

Most of the existing consumption analyses of this sort refer to such broad aggregates as total consumer expenditures, or total durable goods purchased, although a few studies have been made of automobile sales and home furnishings and appliances.

Analyzing the effect of income on sales of any given appliance introduces a number of further complications. First, historical data on dollar volume of appliance sales to consumers are almost non-existent; even data on unit volume of shipments, for certain appliances, may be insufficient to justify analysis.

Steps must be taken to eliminate or to account for the effect of non-income factors. For example, the low production levels of appliances of all types in 1942-1946 obviously cannot be attributed to income. These years, therefore, must be excluded from any analysis.

Fashion plays a part, too. Money that a family would have spent for a new refrigerator a few years ago is now used for an automatic dryer instead because "everyone is getting one."

Furthermore, appliances are not the only large-ticket purchases consumers make. In the past few years, particularly, automobile purchases have accounted for an increasingly dominant proportion of consumer expenditures for durable goods. This trend, too, is largely a matter of fashion.

*(Continued on page 34)*

Floor display at South Jersey Gas in Atlantic City features several gas dryers and campaign's main slogan

Here's team that devised formula to stimulate dryer sales: (l. to r.) Elton Stuenckel, ad manager; E. H. Mattson, sales manager; and Hugh Wathen, sales vice-president

Bridgeton office, in common with all 8 branch offices, devotes its window to gas dryers during 11-week drive

*South Jersey Gas enlists dealers in hard-hitting sales campaign under slogan, "Own a Gas Dryer for Less Than $1 a Week"*

# How to sell dryers where they never sold before

How could a strong merchandising gas company add the maximum number of gas dryers to its lines and at the same time initiate a drive to cement relations with its independent dealers? This was the problem that faced South Jersey Gas Company in formulating its promotion plans last winter.

With its own appliance sales averaging more than $12 per customer, South Jersey Gas had established an enviable record as a merchandising utility. However, the alert and aggressive sales tactics that made this record possible were not always conducive to good dealer relations. As often happens, some dealers were inclined to look at gas company activity, rather than their own relative inactivity, as the reason for slow gas appliance sales.

To combat this attitude, without conceding for a moment its validity, the sales and advertising staff set out to devise a plan that would make it easy for both dealers and their own salesmen to sell dryers. The magic formula was not

**Dealer ads, tied-in with gas company's large ads, dominated territory's daily and weekly newspapers throughout 11-week campaign. To encourage dealers, gas company omitted usual signature in many cases and in all promotional material urged customer to buy from dealer or company**

found without a lot of work on the part of Hugh Wathen, sales vice-president; Edgar H. Mattson, sales manager; and Elton Stuenckel, advertising manager. One aspect—financing—had to be approved by top management.

To judge its success, let's look at the results.

Of 173 dealers invited to participate 120 accepted. As of March 31, the campaign, scheduled for 11 weeks from January 16 to March 31, has produced 853 gas dryer sales. Of this number, 607 were made by dealers and 246 by South Jersey Gas salesmen.

This marks the first real acceptance of gas dryers by South Jersey Gas customers. These sales during the 11-week period more than tripled total gas dryer sales during 1955. Because of its success, the campaign has been extended through April.

Basic components of the plan were embodied in the advertising, as they held inducements for both the dealer and the customer. The "seven ways to save" by purchasing a dryer were:

1. Fastest drying time.
2. Least drying cost.
3. Free installation.
4. Free adjustment service.
5. No money down.
6. Five years to pay.
7. Three per cent per annum carrying charge.

Under Point 3, South Jersey Gas Company made arrangements with installers throughout the territory for vented installations at $25 each. The gas company paid $15 toward each job and the dealer paid the remaining $10. If the dealer made his own installation, the gas company paid him $15.

Free adjustment came under the South Jersey Gas policy of service for all gas appliances on its lines.

Points 5, 6, and 7—no money down, five years to pay and three per cent carrying charges—were the heart of the promotion and tied in with the main advertising theme of the campaign:

"Why rent or do without when you can OWN your gas dryer for less than $1.00 a week."

In order to see the reasons why such a theme fit South Jersey Gas Company's particular situation one must look back to 1955.

Both Mr. Wathen and Mr. Mattson admit that South Jersey Gas had never succeeded in obtaining its potential gas dryer load. Neither had its electric competitor—dryers, gas or electric, had just not caught on in the territory.

In 1955, while tying in as usual with national American Gas Association promotions, South Jersey Gas tried on a *limited scale* a rental plan for gas dryers. The customer was offered a gas dryer installation for a year's rental at a moderate monthly rate.

The plan met with considerable acceptance and follow-up sales were being made. Then early last fall, South Jersey Gas' electric competitor broke a similar rental plan for electric dryers with full-

*(Continued on page 27)*

# Facts and Figures

Prepared by A.G.A. Bureau of Statistics

Shipments of automatic gas water heaters totaled 229,200 units in January 1956, up 8.7 per cent over January of last year and up 23.6 per cent over the preceding month. Gas range shipments of 151,900 units during January were down slightly from a year ago, when 152,700 units were shipped. During this same period electric range shipments of 125,900 units dropped 19.4 per cent from the 156,200 units shipped during January of last year.

There were 69,800 gas-fired central heating units shipped during January, up 17.1 per cent over shipments made in the comparable month a year ago. During this same period oil-fired burner installations were estimated at 55,080 or 2.8 per cent above last January.

Housing starts during January aggregated 74,000 units, down substantially from a year ago when 87,600 units were started. However, based on the latest report by the Department of Labor, home building turned upward slightly in February after a five-month decline. Work was begun on 78,000 units up from the 74,000 started last month though down 13.2 per cent from a year ago. February's annual rate of home building on a seasonally adjusted basis is holding near 1.2 million units, which if continued would make 1956 the third best in history.

Shipments of automatic gas dryers continue to make substantial gains. During January 42,500 gas dryers were shipped, up 85.6 per cent over the same month a year ago. Electric dryer shipments were up 33.8 per cent to a total of 123,800 units shipped during this same period.

Gas appliance data relate to manufacturers' shipments by the entire industry compiled by the Gas Appliance Manufacturers Association. Industry-wide electric appliance statistics are based on data

*(Continued on page 36)*

## SALES OF GAS AND ELECTRIC RESIDENTIAL APPLIANCES DURING JANUARY, 1956

(WITH PER CENT CHANGES FROM THE CORRESPONDING PERIOD OF THE PRIOR YEAR)

| | January, 1956 | | December, 1955 | |
|---|---|---|---|---|
| | Units | Per Cent Change | Units | Per Cent Change |
| **RANGES** | | | | |
| Gas | 151,900 | — 0.7 | 152,700 | +4.8 |
| Electric | 125,900 | —19.4 | 135,000 | +38.9 |
| **WATER HEATERS** | | | | |
| Gas | 229,200 | + 8.7 | 185,400 | +11.2 |
| Electric | 69,200 | +10.9 | 56,500 | +14.4 |
| **GAS HEATING** | | | | |
| Furnaces | 57,500 | +13.4 | 54,600 | + 8.5 |
| Boilers | 4,900 | +32.4 | 5,000 | +19.0 |
| Conversion Burners | 7,400 | +42.3 | 9,200 | 0.0 |
| **DRYERS** | | | | |
| Gas | 42,500 | +85.6 | 42,200 | +69.2 |
| Electric | 123,800 | +33.8 | 119,600 | +32.3 |

## GAS SALES TO ULTIMATE CONSUMERS BY UTILITIES AND PIPELINES DURING JANUARY

(MILLIONS OF THERMS)

| | 1956 | 1955 | Per Cent Change |
|---|---|---|---|
| Month of January | | | |
| All types of Gas | 8,392.5 | 7,212.3 | +16.4 |
| Natural Gas | 7,934.0 | 6,820.4 | +16.3 |
| Other Gases | 458.5 | 391.9 | +17.0 |
| Twelve Months Ending January 31 | | | |
| All types of Gas | 69,206.8 | 61,733.0 | +12.1 |
| Natural Gas | 65,693.7 | 58,393.6 | +12.5 |
| Other Gases | 3,513.1 | 3,339.4 | + 5.2 |
| Index of Monthly Utility Gas Sales (1947-49 = 100) | 239.8 | 206.0 | +16.4 |

## PERTINENT BUSINESS INDICATORS, JANUARY

(WITH PER CENT CHANGES FROM THE CORRESPONDING PERIOD OF THE PRIOR YEAR)

| | January | | | December | | |
|---|---|---|---|---|---|---|
| | 1956 | 1955 | Per Cent Change | 1955 | 1954 | Per Cent Change |
| Industrial activity (1947-49 = 100) | 144 | 132 | + 9.1 | 144 | 130 | +10.8 |
| Consumer prices (1947-49 = 100) | 114.6 | 114.3 | + 0.3 | 114.7 | 114.3 | + 0.3 |
| Housing starts, Non-farm (thousands) | 74.0 | 87.6 | —15.5 | 75.0 | 90.6 | —17.2 |
| New private construction expenditures ($ million) | 2,126 | 2,073 | + 2.6 | 2,410 | 2,263 | + 6.5 |
| Construction costs (1947-49 = 100) | 150.2 | 142.4 | + 5.6 | 149.3 | 142.1 | + 5.1 |

# Name fleet safety winners

V. A. Howell, Long Island Lighting Co., heads A. G. A. participation in fleet safety contest

J. D. Johnston (right), Alabama-Tennessee Natural Gas, accepts gas transmission award for no-accident record. F. M. Kreml, National Safety Council, is at left

National honors for the safety performance of drivers and vehicles were accorded winners in the gas industry's National Fleet Safety Contest during the 43rd National Safety Congress and Exposition conducted by the National Safety Council in Chicago.

Seventy-four companies competed last year, reflecting experience with 19,859 gas industry motor vehicles, or approximately 65 per cent now reporting vehicle accident statistics to the American Gas Association.

Winners of the 1955 contest were:

Gas utility—very large group—first place; Hope Natural Gas Co., Clarksburg, W. Va., with 1.31 accidents per 100,000 vehicle miles driven.

Gas utility—large group—first place; Pioneer Natural Gas Co., Amarillo, Texas, with .57 accidents per 100,000 vehicle miles driven.

Gas utility—medium group—first place; Wisconsin Power & Light Co., Madison, Wis., with .20 accidents per 100,000 vehicle miles driven.

Gas utility—medium group—second place; Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y., with .37 accidents per 100,000 vehicle miles driven.

Gas utility—small group—first place; Concord Natural Gas Co., Concord, N. H., with a record of 137,000 miles driven and no accidents recorded.

Gas transmission group—first place; Alabama-Tennessee Natural Gas Co., Florence, Ala., with 365,000 miles driven and no accidents.

## Average is 1.44

The winners compared very favorably with the more than 1,600 fleets comprising 155,887 vehicles entered in all classifications of the National Fleet Safety Contest. The national average for all fleets was 1.44 accidents per 100,000 miles driven.

The Gas Industry Division average was 1.84, while the Public Utilities Division (electric, water and steam) showed a 1.74 average per 100,000 miles driven.

According to V. A. Howell, senior safety coordinator of Long Island Lighting Co., and chairman of the Motor Vehicle Safety Subcommittee, this was the culminating activity of the first annual Gas Industry Division National Fleet Safety Contest. The contest is part of the continuing motor vehicle safety program planned, organized and coordinated with the National Safety Council by the A. G. A. Accident Prevention Committee.

The program built around the National Fleet Safety Contest is designed to bring about:

(1) Uniformity of statistical information on fleet records of the gas industry; (2) establishment of standards within our industry to form the basis for analysis and recommendations for corrective industry-wide action, and (3) give the

Everett Ravn, Wisconsin Power & Light, acts for winner in medium size gas utility group

Award for very large gas utility is accepted by C. T. Cummings, Hope Natural Gas Co.

industry a medium (Fleet Safety Contest Bulletin) for exchanging and disseminating current motor vehicle accident experience.

"I certainly feel that our first year's contest was a success despite the relatively small number of companies participating," Mr. Howell said. "Remember that this was the first time the gas industry ever had a National Fleet Safety Contest of its own, and I would like to add that the contest is actually secondary as far as the industry and the Accident Prevention Committee is concerned.

"We are vitally interested in getting valid data to assist and guide us in our future motor vehicle accident endeavors. This is really the most important part of the contest. It is not who won but the data we get as a result of the contest that is invaluable to the industry's Accident Prevention Committee as well as companies competing in the contest.

"Competing companies now have a monthly valid measuring stick whereby they can better evaluate their respective motor vehicle experience," Mr. Howell continued. "I sincerely hope that eventually the Gas Industry Fleet Safety Contest Bulletin will develop into a real gas industry 'fleet idea exchange' and 'fleet information swapsheet.' This again depends on the continued interest and active support of companies submitting data."

The 1956 contest has 91 fleets currently entered in the Gas Industry Division of the contest. Mr. Howell said more companies are needed for next year's contest in the large (500-1000 employees), small (100 or less employees, but having five or more vehicles in the company) and the transmission groups. He urged every eligible company in the industry to join, saying all they have to report is the total miles driven each month along with the number of accidents experienced.

"I do want to emphasize this very important point," Mr. Howell said, "and I believe that it reflects the thinking of all personnel who have been given the responsibility of company motor vehicle accident prevention programs. Credit for the awards received and the continuing improvement in motor vehicle safety in the gas industry belongs to the employees. They are making really fine progress in reducing the number, as well as the severity, of this type of accident in their variety of job classifications and responsibilities."

## Reserves gain 12 trillion cu. ft. *(Continued from page 5)*

drilled portion of a given field. When the undrilled area is considered proved, it is so related to the developed acreage and the known field geology and structure that its productive ability is considered assured.

Proved recoverable reserves of natural gas are those reserves estimated to be producible under present operating practices, with no consideration being given to their ultimate use. Since the estimates are made by pools, the recovery factors or abandonment pressures used in the calculations are governed by the operating conditions in each individual pool.

Proved recoverable reserves of natural gas liquids are those contained in the recoverable gas reserves subject to being produced as natural gas liquids by separators or extraction plants, now in operation, under construction or planned for the immediate future.

For purposes of developing reserve estimates, natural gas liquids are defined as those hydrocarbon liquids which are gaseous or in solution with crude oil in the reservoir and which are recoverable as liquids by the processes of condensation or absorption which take place in field separators, scrubbers, gasoline plants, or cycling plants. Natural gasoline, condensate, and liquefied petroleum gases fall in this category. While the liquids so collected and the products derived from them in some of the modern plants are known by a variety of names, they have been grouped together here under the general heading "Natural Gas Liquids."

The estimates presented in this report incorporate the results of carefully detailed studies of many hundreds of fields and pools throughout the United States. Their preparation has required the help and active cooperation of specially trained geologists and engineers familiar with developments in all producing areas throughout the country. The Committee is fortunate to have obtained the help of this group of men who have served as subcommittee members. As in past years, they have given generously of their time and efforts to make these estimates as complete and accurate as possible. The Committee expresses its appreciation to these men.

The Committee also acknowledges the helpful cooperation of the Committee on Petroleum Reserves of the American Petroleum Institute, on whose estimates of crude oil reserves the estimates of dissolved gas reserves are based, and the Committee on Underground Storage of the American Gas Association, who supplied the data on which the underground storage figures are based.

## NATURAL GAS LIQUIDS RESERVES

| | | (Barrels of 42 U.S. Gallons) |
|---|---|---|
| Total proved reserves as of December 31, 1954 | | 5,244,457,000 |
| Extensions and revisions of previous estimate during the year of 1955 | 447,160,000 | |
| New reserves discovered in 1955 | 67,348,000 | |
| Total proved reserves added in 1955 | | 514,508,000 |
| Total proved reserves as of December 31, 1954, and new proved reserves added in 1955 | | 5,758,965,000 |
| Deduct production during 1955 | | 320,400,000 |
| Total proved reserves of natural gas liquids as of December 31, 1955 | | 5,438,565,000 |

Reserves data are shown by states in Table 2

## TABLE 3 SUMMARY OF ANNUAL ESTIMATES OF NATURAL GAS RESERVES FOR PERIOD DECEMBER 31, 1945 TO DECEMBER 31, 1955

(Millions of Cubic Feet—14.65 psia, at 60 deg. F)

| | Natural Gas Added During Year | | | | | | |
|---|---|---|---|---|---|---|---|
| Year | Extensions and Revisions | Discoveries of New Fields and New Pools in Old Fields | Total of Discoveries, Revisions and Extensions | Net Change in Storage | Net Production During Year | Estimated Proved Reserves as of End of Year | Increase over Previous Year |
| 1945 | — | — | — | — | — | 147,789,367 | — |
| 1946 | a | a | 17,729,152 | a | 4,942,617 | 160,575,901 | 12,786,535 |
| 1947 | 7,570,654 | 3,410,170 | 10,980,824 | a | 5,629,811 | 165,926,914 | 5,351,013 |
| 1948 | 9,769,483 | 4,129,089 | 13,898,572 | 51,482 | 6,007,628 | 173,869,340 | 7,942,426 |
| 1949 | 8,061,429 | 4,612,870 | 12,674,299 | 82,746 | 6,245,041 | 180,381,344 | 6,512,004 |
| 1950 | 9,172,381 | 2,877,351 | 12,049,732 | 54,301 | 6,892,678 | 185,592,699 | 5,211,355 |
| 1951 | 13,013,606 | 3,039,385 | 16,052,991 | 132,751 | 7,966,941 | 193,811,500 | 8,218,801 |
| 1952 | 8,934,470 | 5,411,043 | 14,345,513 | 198,850 | 8,639,638 | 199,716,225 | 5,904,725 |
| 1953 | 13,371,355 | 7,081,661 | 20,453,016 | 516,431b | 9,238,540 | 211,447,132 | 11,730,907 |
| 1954 | 4,632,309 | 4,966,894 | 9,599,203 | 90,906 | 9,426,509 | 211,710,732 | 263,600 |
| 1955 | 16,298,125 | 5,719,069 | 22,017,194 | 87,637 | 10,118,118 | 223,697,445 | 11,986,713 |

a Not estimated.
b All native gas in storage reservoirs formerly classified as a natural gas reserve is included in this figure.

## TABLE 4 SUMMARY OF ANNUAL ESTIMATES OF NATURAL GAS LIQUIDS RESERVES FOR PERIOD DECEMBER 31, 1946 TO DECEMBER 31, 1955

(Thousands of Barrels of 42 U. S. Gallons)

| | Natural Gas Liquids Added During Year | | | | | |
|---|---|---|---|---|---|---|
| Year | Extensions and Revisions | Discoveries of New Fields and New Pools in Old Fields | Total of Discoveries, Revisions and Extensions | Net Production During Year | Estimated Proved Reserves as of End of Year | Increase Over Previous Year |
| 1946 | — | — | — | 129,262 | 3,163,219 | — |
| 1947 | 192,237 | 59,301 | 251,538 | 160,782 | 3,253,975 | 90,756 |
| 1948 | 405,874 | 64,683 | 470,557 | 183,749 | 3,540,783 | 286,808 |
| 1949 | 294,211 | 92,565 | 386,776 | 198,547 | 3,729,012 | 188,229 |
| 1950 | 707,879 | 58,183 | 766,062 | 227,411 | 4,267,663 | 538,651 |
| 1951 | 648,497 | 75,494 | 723,991 | 267,052 | 4,724,602 | 456,939 |
| 1952 | 475,170 | 81,668 | 556,838 | 284,789 | 4,996,651 | 272,049 |
| 1953 | 648,047 | 95,922 | 743,969 | 302,698 | 5,437,922 | 441,271 |
| 1954 | 20,830 | 86,520 | 107,350 | 300,815 | 5,244,457 | (—)193,465 |
| 1955 | 447,160 | 67,348 | 514,508 | 320,400 | 5,438,565 | 194,108 |

# IGT reports on equilibrium moisture content of natural gases

a PAR activity

THE MOISTURE contents of natural gases are important factors in the design and operation of equipment involved in natural gas production, processing and transmission. Prevention of hydrate formation and liquid water deposition in pipelines is ordinarily accomplished by dehydration, and the design and operation of dehydration equipment require accurate knowledge of the equilibrium moisture contents of the gases in question.

The work was carried out at the Institute of Gas Technology, Chicago, under sponsorship of the Pipeline Research Committee of the American Gas Association, sponsored by PAR.

Experimental measurements of the moisture contents of methane, propane, nitrogen, a methane-propane mixture, two methane-butane mixtures, a methane-pentane mixture, and nitrogen-free and high-nitrogen (14.8 per cent) natural gases, at 220F and in the 1000-10,000 psi pressure range, and a newly-developed correlation for determining the equilibrium moisture content of any natural gas, are presented in *Equilibrium Moisture Content of Natural Gases*, by R. F. Bukacek.

R. E. EBERLE, *CHAIRMAN* · W. D. SWEETMAN, *VICE-CHAIRMAN*

# How to report cash flow

By JOHN A. DEKKER
*Natural Gas Pipeline Company of America*
*Chicago, Illinois*

During the decade since World War II there has occurred in this country the most phenomenal growth ever experienced by private enterprise. This has given impetus to the fact we have been and are considered to be the wealthiest and greatest mass-producing country in the world.

In this record-breaking era we have produced more babies, more washing machines, more steel, more automobiles, and more new appliances and luxury items than ever before. The resultant impact on the public utilities has been tremendous. It has caused us to experience a most fantastic growth in the number of customers, with the consequent necessity of making unprecedented capital expansions in plant facilities.

Behind all these achievements the mysterious inner-workings of our economic and capitalistic system have provided the sufficiency of wealth and cash. In our utilities some of this cash came from increased earnings and funds generated internally, but a great portion of the cash required has come from new money —either in the form of bank loans or bond and capital stock issues.

With the advent of this new money, and inherent in the acquisition thereof, has also come the imperative need for sustained earnings to meet interest payments, debt retirement and the payment of adequate dividends.

To effectually anticipate the financial needs we have had to become more and more cognizant of the importance of the

.....
Company

**BUDGET ESTIMATE OF FUNDS REQUIRED AND AVAILABLE**

Year .....

| | |
|---|---|
| **Purposes for Which Funds are Required** | |
| Plant Additions | |
| Cost of Removal—Retirements | |
| Variation in Receivables, Supplies, | |
| Reserves, etc.—Net: | |
| Current and Accrued Assets | |
| Deferred Debits | |
| Current and Accrued Liabilities | |
| Deferred Credits | |
| Reserves | |
| Contributions in Aid of Construction | |
| Total Variation in Receivables, Supplies, Reserves, etc.—Net | |
| Deposits for Sinking Fund | |
| Payment of Income Taxes: | |
| Federal Income Tax—Previous Year | |
| Federal Income Tax—Current Year | |
| State Income Tax—Previous Year | |
| Misc. Long-term Debt Retirements (Bank Notes) | |
| Total Funds Required | |
| **Sources of Funds** | |
| Balance to Surplus from Income Account | In Total and By Months |
| Less Estimated Dividends on Common Stock | |
| Balance | |
| Add Non-cash Charges to Income: | |
| Provision for Depreciation | |
| Amortization of Plant Acquisition Adjustments | |
| Provision for Deferred Income Taxes | |
| Amortized Premium on Debt—Credit | |
| Total Funds from Income | |
| Salvage from Plant Retired | |
| Accrual for Income Taxes—Current Period: | |
| Federal Income Tax | |
| State Income Tax | |
| Property Release Deposits Drawn Down (Previous Year) | |
| New Money Provided: | |
| Sale of Common Stock | |
| Sale of Bonds | |
| Bank Loans (Short-term) | |
| Total Funds Available | |
| Funds Available less Funds Required | |
| Balance of Funds from Previous Period | |
| Total Funds at Close of Period | |
| Deduct Minimum Bank Balance | |
| Balance of Funds Available | |

**Exhibit "A" illustrates a typical cash funds statement used by utilities**

cash flow in our own utilities. No longer can we predict the cash requirements for the next 12 months and rest on the smug satisfaction that our financial position is sufficiently preserved. Budgets and forecasts are now being projected not only for the next year but also for three, five and ten years by most progressive utilities.

The prime object of these projections of anticipated revenues, construction programs, etc., is to determine the anticipated cash required; to decide on the type of securities to be issued; to make sure the capitalization ratios remain adequate and the utility's financial position is not impaired; and finally, in most instances, to effect the timing of proposed security issues in conjunction with the best money market available.

The cash flow in a public utility may be likened to the blood stream in the human body. Similarly, as blood reaches all parts of the human body the flow of cash is reflected in all accounts of the utility!

It must not be allowed to become inactive or remain dormant, such as the tying-up of cash in expensive bushings or repair parts for transformers which are never used and finally become obsolete. It must not be allowed to be invested in a coal stock pile far beyond the normal requirements for operation, thereby earning no return. It must not be used to construct and maintain a distribution line so that it satisfies the aesthetic senses of the superintendent, and no return on that portion of the investment beyond the need for sound construction is realized.

Cash should not be tied up in excessive inventories. Even though materials and supplies are considered as current assets, they cannot be readily converted into cash.

One of the most important decisions for the management in public utilities today is authorizing cash outlays for new capital assets versus cost of maintaining existing facilities. By investing in large, economical generating plants and transmission lines we eliminate the cost of operating many small, inefficient plants having high fuel and operating costs. The economic theory behind this philosophy is that by increasing investment we can reduce operating costs.

However, before spending cash for such illustrations we must be sure that (1) the investment is expended for the purpose of carrying more load and we can reasonably see where the additional revenues will pay the return on the investment; and (2) if the investment does not increase revenues it should sufficiently reduce operating costs in order to be justifiable.

Obviously the discussion above concerns the responsibilities of top management as represented by the chief financial officer of the modern utility. He must be familiar not only with the requirements and availability of cash but with the resultant effect of the flow of cash into and out of the company's accounts.

Practically all utilities, whether large or small, prepare at least an annual operating budget. It is generally recognized that the chief purpose of any such budget or forecast is to examine the demands for and availability of cash and to arrive at the best possible operating conclusions. More often than not the construction budget, as initially presented for consideration, has been trimmed due to the inability of the utility to finance such a program soundly. Similarly the operating or merchandising programs have felt the brunt of the axe, and in many instances proposed maintenance items have been deferred.

While this paper does not intend to cover the functions of the chief financial officer of the utility, it behooves us to be aware of the ultimate financial position the utility may be forced into by excessive debt financing and to recognize the fact that the chief financial officer

.....

Company

**BUDGET ESTIMATE OF CASH RECEIPTS AND DISBURSEMENTS**

Year .....

| | |
|---|---|
| h Balance at Beginning of Period | |
| **RECEIPTS** | |
| lections—All Sources | |
| sumers' Deposits | |
| ounts and Notes Receivable | |
| rests and Discounts | |
| k Loans (Short-term) | |
| of Common Stock | |
| of Bonds | |
| of Stock to Employees | |
| perty Release Deposits Drawn Down | |
| Total Receipts | |
| Total Cash | |
| **DISBURSEMENTS** | |
| rating Expenses, Construction, Purchase of | |
| nd & Properties, Materials and Supplies: | |
| Gas Fuel for Generating Plants | |
| Coal and Oil Fuel for Generating Plants (FOB Plt.) | |
| Purchased and Interchange Power | |
| All Other | |
| Total Expenses, Construction, and Material and Supplies | In Total and By Months |
| roll | |
| es—Federal Income | |
| es—State Income | |
| es—Other | |
| rest on Bonds | |
| dends on Common Stock | |
| dends on Preferred Stock | |
| rest and Discounts | |
| rest on Long-term Bank Notes | |
| king Fund Deposits | |
| sion Plan Trust Fund Payment | |
| g-term Bank Notes | |
| k Loans (Short-term) | |
| Total Disbursements | |
| h Balance at Close of Period | |
| Minimum Bank Balances | |
| Balance after Minimum Bank Balances | |
| p. Cash Investments—Close of Period | |
| Balance of Cash Investments—Close of Period | |

**Exhibit "B" is a sample of cash flow report submitted to top management at budget time**

.....

Company

**ESTIMATE OF CASH RECEIPTS AND DISBURSEMENTS**

Period.....19...

| | Month of | Month of | Month of |
|---|---|---|---|
| Cash Balance at Beginning of Period | | | |
| **RECEIPTS** | | | |
| Collections—All Sources | | | |
| Consumers' Deposits | | | |
| Accounts and Notes Receivable | | | |
| Interests and Discounts | | | |
| Bank Loans (Short-term) | | | |
| Sale of Common Stock | | | |
| Sale of Bonds | | | |
| Sale of Stock to Employees | | | |
| Property Release Deposits Drawn Down | | | |
| Total Receipts | | | |
| Total Cash | | | |
| **DISBURSEMENTS** | | | |
| Operating Expenses, Construction, Purchase of Land & Properties, Materials and Supplies | | | |
| Payroll | | | |
| Taxes—Federal Income | | | |
| Taxes—State Income | | | |
| Taxes—Other | | | |
| Interest on Bonds | | | |
| Dividends on Common Stock | | | |
| Dividends on Preferred Stock | | | |
| Interest and Discounts | | | |
| Interest on Long-term Bank Notes | | | |
| Sinking Fund Deposits | | | |
| Pension Plan Trust Fund Payment | | | |
| Long-term Bank Notes | | | |
| Bank Loans (Short-term) | | | |
| Total Disbursements | | | |
| Minimum Working Capital—Required for Normal Bank Balances | | | |
| Total Cash Requirements | | | |
| Surplus Cash at Close of Period | | | |
| Temp. Cash Investments at Close of Period | | | |
| Combined Total | | | |

Remarks:

**Exhibit "C" shows how top management can be kept informed of current cash position**

must assume the role of guardian.

Most utilities prepare at budget time a cash schedule (which becomes an integral part of the budget) depicting the requirements and availability of cash for the ensuing year—by months. This schedule is the key to evaluating the over-all cash picture of the company's entire operations, and is usually prepared in final form approximately thirty to sixty days before the beginning of the budget year. By projecting this application of funds schedule by months top management is informed not only of the total amount of new money necessary to be provided but is forewarned of the timing for such new financing.

Exhibit "A" is presented as an illustration of the principal components comprised in such a cash funds statement and, for the most part, is employed by all utilities in at least a similar form. Some of the items involved in this prediction for cash funds are substantially actual, such as Deposits for Sinking Fund, Provision for Depreciation, etc.

However, under sub-grouping "Variation in Receivables, Supplies, Reserves, etc.—Net" it is imperative that the fluctuating items embraced within this category be meticulously scrutinized. To illustrate, it is essential to review the proposed monthly coal pile inventories to make doubly sure they are in accord with (1) management's policy of maintaining minimum inventories, (2) requirements necessary for new generating units and (3) expected price levels.

The construction program is an important part of the utility's budget and, generally speaking, is in complete detail. Any major additions or deletions as they occur necessitate budget revisions, which in turn require a prompt revision in the cash requirements.

Under the section headed "Source of Funds" there is available for the chief financial officer and for other top management results of the determination of the amount of funds that are generated internally. This item has provided a very pleasant surprise over the past few years, particularly the cash benefit in taxes realized in connection with Amortization of Emergency Facilities, and more recently the cash benefit due to Accelerated Depreciation.

Under sub-section headed "New Money Provided" there must be resolved the amount of new financing required to meet the cash demands, and after top management has decided on the type of securities to be issued, this section pinpoints the necessary timing of the sale of such securities to adequately and safely meet the cash demands and to provide for a safe, marginal maintenance of a minimum bank balance.

"Cash Receipts and Disbursements," Exhibit "B," is another sample cash flow report submitted to top management at budget time by most utilities. The cash items as they appear on this schedule represent merely a rearrangement of the items comprised in Exhibit "A", previously discussed, in order to conform with the cash items as they are normally receipted or disbursed by the treasurer. Moreover, the treasurer utilizes this cash flow schedule to secure certain known data and to make cumulative comparisons of budgeted cash with actual cash transactions in order to determine the expected cash position.

In order to keep top management informed currently of the cash position of the utility, the treasurer and/or chief financial officer must periodically report comparisons of the expected cash position with the budgeted cash. A specimen of these short-term estimates (30-60-90 days) is Exhibit "C." You will note it is practically the same form as Exhibit "B," except it is expanded to cover the required interim periods.

Month by month the treasurer knows which items are over and which items are under the budget and he attempts to replot the next 30-60-90 days' activities with more recent information than was available at budget time. Some of the cash items subject to a great variance, such as operating expenses and construction, may be delayed temporarily due to inclement weather or material shipments, and thus are running under the budgeted amounts.

Often there will, however, be a catch-

up period, so that in reality the treasurer must effect a rescheduling of budgeted disbursements in order not to show a false cash position. Moreover, in the event of a poor present cash position, caused for example by an accelerated construction program, top management will not be too alarmed if the estimated cash position at the end of 90 days is again in line with the budget. These interim reports are therefore a vital report to top management.

Whenever an unusual cash transaction occurs which was not anticipated at budget time, and which considerably alters the future cash position, the treasurer will normally explain such transactions on these interim reports with an explanatory note.

It is not the intent of this paper to prescribe an ideal internal control system for the flow of cash funds. Each utility must decide the methods it wishes to pursue in this control, utilizing the personnel within its own organization. It should be pointed out, however, that a most vigilant control should be maintained, not merely from an audit standpoint, but primarily to keep abreast of the situation and to keep top management informed.

In this connection let us point out that if a thorough and diligent examination of cash is made at budget time, and a watchdog, internal control over the cash flow is maintained month by month and day by day, there will be no unanticipated financing required.

Some utilities believe an historical cash flow statement should be incorporated in annual reports, etc. It is our belief that, except for insurance companies and security analysts, the inclusion of such a report would be meaningless to the majority of stockholders. In addition, a sufficient number of reports concerning the financial position of the utility is already being submitted to security analysts and such reports are also available in publications such as *Moody's, Standard and Poor's,* and other financial journals.

In conclusion, it is hoped that this paper and the accompanying exhibits, which are a composite of sample cash flow reports submitted by a number of electric and gas utilities in response to the request of your sub-committee appointed to study this subject, will enable some companies to improve their present practices of anticipating and accounting for cash and in many instances considerably reduce costs.

## How to sell dryers

*(Continued from page 19)*

scale promotion offering a much lower rental price. The electric company's success in placing these "rental" dryers through dealers was outstanding, according to Mr. Wathen. Just what success they will have in converting the rentals into sales upon the completion of the year-long contract remains to be seen.

Faced with this competition and unwilling to venture into extremely low-price rentals, South Jersey Gas had to devise a method of selling gas dryers at terms as attractive as the competition's rental plan.

At the same time, in order to enlist appliance dealer support, the plan had to be as "risk-proof" from the dealer's point of view as the rental plan.

The answer was long term, low cost time payments. To make this possible, South Jersey Gas had to be prepared to pick up the dealer's paper on a no recourse basis and at the same time keep carrying charges low. Presented to South Jersey Gas President T. H. Kendall in this light, the financing plan was accepted by top management.

With the basic plan agreed upon, a meeting of distributors and manufacturers' representatives was held in the gas company's beautiful new Hospitality House adjoining the Atlantic City headquarters. Because the meeting took place during the holiday season, no attempt was made to hold a dealers' affair.

The eight leading gas dryer distributors of the area were enthusiastic and promised full support to the campaign as outlined by Mr. Mattson, sales manager.

The extensive advertising program, designed to saturate the 1,900 square mile South Jersey Gas territory during the 11 weeks of campaign, was outlined by Elton Stuenckel, advertising manager. A cooperative advertising plan for dealers was offered, under which the gas company would pay 25 per cent of the cost of the dealer's advertising devoted to gas dryers. The wide use dealers made of this offer multiplied the gas company's advertising.

The campaign was kicked off with introductory ads in the daily press of Atlantic City, Millville, Vineland and Bridgeton, plus insertions in weeklies for a total of 31 newspapers.

These were followed by further ads in the same newspapers, plus radio spots over seven stations. Car cards were placed on all gas company trucks, and on trolleys and buses. A total of 27 billboards carried 24-sheet posters advertising the campaign.

In addition, window materials and animated displays were provided for dealer use. Some of this material was prepared by A. G. A.'s Promotion Bureau and adapted by South Jersey's advertising department for use in this particular campaign.

Dealer response was almost unanimous. Some appliance stores which had never carried a gas appliance came into the fold. White goods appeared among displays of television sets, and some alert dealers put on special squads of door-to-door salesmen. Gas dryers suddenly became the "hot item" throughout the whole territory.

As a drive to place *sold* gas dryers on its lines, South Jersey Gas counts its 1956 gas dryer promotion a resounding success. As a step toward enlisting dealers in the sale of gas appliances, the plan marks an auspicious beginning.

Next on the agenda is the gas water heater promotion. It means a new plan for a new group—plumber-dealers rather than appliance dealers.

## Mail spring programs

● Advance programs for three Operating Section Spring Conferences have been mailed to 3,300 Section members in an attractive and ingenious folder with pockets for all three. Two of the conferences—the distribution and transmission meetings—have been scheduled during the same week in Chicago, thus allowing interested members to attend all or part of each on one trip. The third, the Chemical, Engineering, and Manufactured Gas Production Conference, will be held in Philadelphia, May 16-18.

The Distribution, Motor Vehicles and Corrosion Conference will be held at the Congress Hotel, Chicago, May 7-10. The Gas Supply, Transmission and Storage Conference will be held at the Conrad Hilton Hotel in the same city on May 10 and 11.

The advance programs contain instructions for registering.

L. E. BIEMILLER, *CHAIRMAN* · J. ROBERT DELANEY, *VICE-CHAIRMAN*

# Calling all commercial gas men

For five days—May 7-11—the Edgewater Beach Hotel, Chicago, will be the scene of the American Gas Association Commercial Gas School. An intensive course of training will be given by leaders in the fields of commercial cooking and large volume feeding operations where gas equipment is of major importance.

The course has been designed to provide basic training and will also serve as a refresher course for all those who sell or promote gas and commercial gas equipment.

The Industrial and Commercial Gas Section's sales training committee under the chairmanship of Lester A. Dubberke, Milwaukee Gas Light Co., has selected subjects and lectures on the various phases of selling commercial gas that will give valuable technical information and sales training to the students.

The five-day course will cover such equipment as fryers, baking and counter appliances, controls, ventilation, water heating, steam generation, incineration, selling, cost calculations, service and installation. A display of typical modern commercial gas equipment will be in the schoolroom, and demonstrations on deep fat frying and baking will be given. The students also will view a cooking demonstration at the National Restaurant Exposition. An inspection tour of this show, held concurrently with the school, will be part of the course.

Students will be brought up-to-date on all equipment available to protect and expand the gas load in the highly competitive volume cooking field.

The full program, with subject and instructors, follows.

**Monday, May 7**

"The Value of Well Trained Commercial Gas Representatives;" Lawrence E. Biemiller, manager; industrial fuel department, Baltimore Gas and Electric Co., and Section chairman.

"Tie Scores Don't Win;" F. A. Kaiser, vice-president and sales manager, Michigan Consolidated Gas Company.

"High-Speed Gas-Fired Fryer Development;" Forrest G. Hammaker Jr., research engineer, American Gas Association Laboratories.

"Sales Advantages of Fryers;" L. Frank Moore, vice-president; The Frymaster Corp., Arthur D. Pitman, Anetsberger Brothers, Inc.; James K. Vandervort, Magic Chef, Inc.; and M. H. Douglas, J. C. Pitman & Sons, Inc.

"Gas Frying Demonstration;" Richard T. Keating, managing director, Frying Equipment and Supply Company.

**Tuesday, May 8**

"Cooking Demonstration at The Restaurant Show;" Colonel Paul P. Logan, director of research, food and equipment, National Restaurant Association.

Inspection of Equipment and Tour of the National Restaurant Show.

**Wednesday, May 9**

"Incineration;" M. A. Naulin, president, McNaulin, Inc.

"Service;" R. E. Regan, general manager, Gas Consumers Service.

"Water Heating for Dishwashing;"

# ...report to Chicago, May 7-11

Howard Whipkey, Ruud Manufacturing Company.

"Large Volume Water Heating for Other Commercial Uses;" Don Williams, manager, commercial water heater sales, A. O. Smith Corporation.

"Elements of Good Oven Design;" Thomas E. Hampel, senior research engineer, American Gas Association Laboratories.

"Deck Type Bake Ovens;" Paul C. Grimes, sales manager, The G. S. Blodgett Company, Inc.

"Revolving Tray Ovens;" a joint demonstration by Middleby-Marshall Oven Company and Procter & Gamble Company.

**Thursday, May 10**

"Automatic Controls;" J. L. Gabris, commercial sales manager, Robertshaw thermostat division, Robertshaw-Fulton Controls Company.

"Steam Generation;" E. E. Magnuson, vice-president in charge of boiler sales, Eclipse Fuel Engineering Company.

"Compartment Steamers;" J. H. Holman, manager, food service division, Market Forge Company.

"Stock Kettles;" F. J. Corcoran, general sales manager, Groen Manufacturing Company.

"Ranges;" Richard Mantz, Magic Chef, Inc., and J. A. Belanger, assistant sales manager, Garland division, Welbilt Corporation.

"Broilers;" Mr. Belanger.

"Open Hearth Broilers;" E. W. Haedike, Mid-Continent Metal Products Company.

"Installation, Venting and Ventilation;" E. A. Jahn, assistant utilization engineer, American Gas Association.

"Calculating Cooking Costs;" L. J. Fretwell, chief commercial, heating and air conditioning engineer, Oklahoma Natural Gas Company.

**Friday, May 11**

"Counter Equipment;" A. M. Bornhofen, vice-president, sales, Anetsberger Brothers, Inc.

"Toasters;" J. T. Heilig, vice-president and sales manager, Savory Equipment, Inc.

"Counter Broilers;" David H. Goldstein, vice-president, Lyons-Alpha Products Company, Inc.

"Gas Today;" James J. Condon, manager, commercial sales department, The Peoples Gas Light & Coke Co. and chairman, Food Service Equipment Committee.

The course will be conducted strictly on the schedule as outlined. There will be a question and answer period at the end of each morning and afternoon session. A written examination will be given at the end of the course at which the students will be permitted to refer to the printed lectures and "Commercial Kitchens," the manual which will be given to each student registered.

Registration at the school is limited to employees of gas companies, gas equipment manufacturers, gas equipment dealers and present or prospective commercial gas customers. The school program setting forth all pertinent information will be in the mail shortly.

J. H. COLLINS, *CHAIRMAN* • GROVE LAWRENCE, VICTOR BITTNER, *VICE-CHAIRMEN*

# Protective device aids stray current surveys

By ELMER C. PAVER

*Engineer*
*Northern Illinois Gas Company*

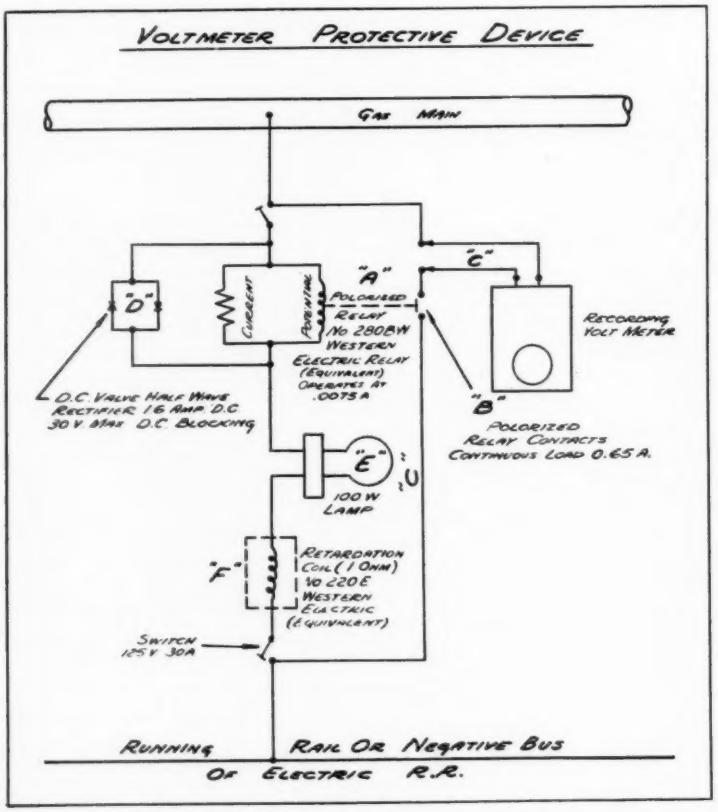

VOLTMETER PROTECTIVE DEVICE
GAS MAIN
"A"
"C"
"D"
CURRENT
POTENTIAL
POLORIZED RELAY No 280BW WESTERN ELECTRIC RELAY (EQUIVALENT) OPERATES AT .007 5 A
RECORDING VOLT METER
D.C. VALVE HALF WAVE RECTIFIER 1.6 AMP D.C. 30 V MAX D.C. BLOCKING
"B"
POLORIZED RELAY CONTACTS CONTINUOUS LOAD 0.65 A.
"E"
100 W LAMP
"F"
RETARDATION COIL (1 OHM) 10 220 E WESTERN ELECTRIC (EQUIVALENT)
SWITCH 125 V 30A
RUNNING RAIL OR NEGATIVE BUS OF ELECTRIC R.R.

Figure 1. Schematic drawing shows how relay protects meter from high voltage

Probably the oldest method of cathodic protection to underground ferrous, copper and lead structures since Sir Humphrey Davy's is the use of stray current from direct current electric railway, surface lines and subway systems. And adversely, some of the most potent losses have been from the inadequate and improper control of these vagabond currents.

It is likely that 99 per cent of the people concerned with underground structures in the many, though diminishing, stray current areas have made a valiant effort to control the effect of these corrosive currents, and in most cases have done the job with fair success; but it is the belief that a more effective job can be accomplished.

This statement is projected from the thought that more accurate data need be and can be secured in such areas. To control these currents, proper drainage through well designed, properly selected and installed reverse current equipment at the points where such potential between the affected structure and the source can be accomplished.

Northern Illinois Gas Company has four electric railways through its territory. Its corrosion department has been well aware of the necessity of proper control in these areas and has made a substantial number of installations to offset the stray current effect. But it became aware of the fact that the data secured was not fine enough to justify expenditures in some areas, so it was necessary that extra effort be given for more accurate voltage measurements to secure the proper data.

In making electrical ties for drainage control of stray current, a survey of potentials between the structure to be relieved and the running rail of the railway or the negative of the supplying substations is always necessary. This company had previously made such surveys in the usual manner by using recording meters of the 24-hour smoked chart type. In this manner, the voltmeter had to be set on high enough scale to take care of the high reversals which gave a very poor chart for the forward, or structure to rail or negative, potential.

As an example, by checking with an indicating meter, the voltage at the time

of passage of a train at the check point, which is usually the highest, is found to be 20 volts, so the recorder is set on 25-volt scale. This means that, in a division of 25 on the chart, each division is one volt. So any forward voltage of one to three volts is very small and barely shows on the chart. It is even worse on higher scales.

As previously stated, this company, with numerous crossing of the railway systems with its distribution and supply lines, knew that to do an accurate and adequate job of stray current mitigation, more accurate potentials had to be obtained since even a good steady or intermittent one or two volt potential from structure to rail can very soon cause a failure, even with coated pipe. So with some effort and thought given the problem, the device as described and illustrated as follows was devised and might be termed a voltmeter protective device.

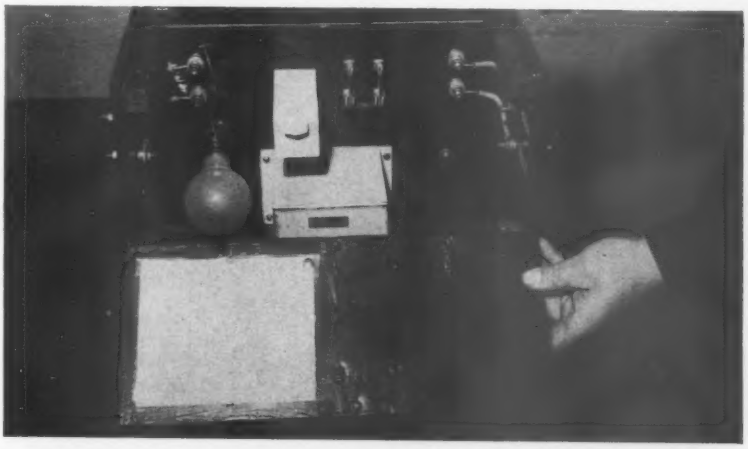
The device as shown in Figure 1 which is the "brains" of a reverse current switch is built around a polarized relay "A," which is adjusted to have the contacts "B" of the recording voltmeter circuit "C" closed on zero or above forward voltage. When reverse voltage occurs, the relay will open the contacts in the recording voltmeter circuit, thereby protecting the meter from higher voltage than set for. The relay is protected from abnormal voltages, occurring occasionally on electric railroads, by the rectifier plates "D," lamp "E," and retardation coil "F."

For example, with a voltage recorder set on 25-volt scale, the low readings for the forward potentials are hardly shown. However, with the ability of the protective device to cut out the high reversal voltages, the recorder can be set on a five-volt scale, and therefore very accurate readings can be obtained, even down to .1 of a volt. It is naturally assumed that the scale set is obtained by observing potentials previous to setting the recorder, or by getting a 24-hour chart previously without the device.

The Northern Illinois Gas Company has made very good use of this device at numerous locations throughout the territory. The data secured has enabled the corrosion department to select the proper locations and proper and most economical type of drainage ties and equipment. No doubt other methods of drainage data may be evaluated such as direct ties on a temporary basis, but it is the thought that expensive cable connections to rail and pipe can be forestalled by more accurate data.

The location of the voltage survey from structure to rail should be checked and approved by the railway so that any accidental short or equipment breakdown will not upset the automatic signal system.

It is the opinion of the author that this device is a valuable addition to the corrosion engineer's equipment. It can be easily made, not unreasonable in cost, and all parts are standard and easily secured.



**Voltmeter protective device can be easily adapted to a carrying case, thus making it quickly available for location tests that corrosion engineers may do in field**

**Author E. C. Paver demonstrates the protective device which he describes as "a valuable addition to corrosion engineer's equipment." All parts are standard, easily secured**

## A. G. A. directory

*(Continued from page 13)*

trols and wiring on gas equipment. The application of electrical controls and wiring on gas equipment is carefully checked for compliance with the National Electrical Code. Tests are performed by the Laboratories engineers to determine that the insulation of the electrical circuits will not break down in service, that the electrical insulation is adequate to prevent leakage currents which may cause shock hazard and that controls and wiring are adequate for the temperatures to which they may be exposed.

Because of the comprehensive electrical tests applied, the Laboratories have been accorded the status of a recognized electrical testing agency insofar as electrical components and wiring on gas equipment are concerned. Appliances having electrical components and offered for sale in Canada are checked by the Laboratories for compliance with the provisions of the Canadian Electrical Code on behalf of the Canadian Standards Association.

Not until the appliance model fully complies with the industry's construction and performance specifications will the Laboratories issue its Certificate of Approval as evidence of approval.

Upon approval, the manufacturer is required to display the Laboratories' registered Approval Seal on each approved model for the guidance of the appliance buyer and the information of the industry. Appearance of the Approval Seal on an appliance is the manufacturer's certification to the Laboratories that the unit conforms in all respects with the model tested. Display of the Approval Seal on an appliance is prima facie evidence that the unit complies with the industry's national standards covering the constructional and performance of approved gas equipment.

Following approval of the appliance model by the Laboratories, the manufacturer's approved appliance is then listed in the next semi-annual Directory or monthly Supplement. The approval granted, however, and the listing in the Directory remains in effect only for the balance of the calendar year. To obtain renewal of approval and continued Directory listing, the Laboratories conduct an annual factory inspection of the manufacturer's production.

If results of the inspection are satisfactory, the Certificate of Approval is renewed and Directory listing continued. Renewal of approval may be obtained only up to a maximum of five consecutive years. After this period, the model, if to be continued, is retested under the latest standards of the industry. Unannounced inspections of approved appliances are frequently made at the factory, at the warehouse, on the gas company's sales floor, or even in the customer's home.

The Laboratories Directory of Approved Appliances and Listed Accessories is widely used by gas utilities, appliance and accessory manufacturers, city authorities, fire insurance agencies, department and mail order stores, and others interested in the purchase, sale and installation of gas equipment.

The Directory is issued in complete form each January and July. Each of these semi-annual issues provides a list of all gas equipment certified by the A. G. A. Laboratories as of the first of the month in which it is published. Monthly supplements are issued for the intervening months, each listing additional equipment certified during the preceding 30 days.

All gas equipment shown in the Directory is arranged according to type under the names of their respective manufacturers. Listings are shown for appliances for use with natural, manufactured and mixed gases, liquefied petroleum gases and LP gas-air mixtures.

The Directory lists both products certified for the companies actually manufacturing them and equipment certified for distributors, jobbers, or dealers. Each issue is provided with a complete index of the organizations listed as well as one of trade names. The Directory also carries a foreword presenting a brief description of the testing, inspection and standards program administered by the A. G. A. Laboratories.

Copies of the Directory are available from the A. G. A. Laboratories, 1032 East 62nd Street, Cleveland 3, Ohio, or from the American Gas Association, 420 Lexington Avenue, New York City, at an annual subscription rate of $2.00. An annual subscription includes two semi-annual issues and 10 monthly supplements. Subscriptions begin with either the January or July complete issue. Single copies of semi-annual issues are available at 75 cents each, monthly supplements at 10 cents per copy.

## Safety course

*(Continued from page 10)*

again, a 35mm sound slide film was used to further inform the group.

Then Ed Baumann spoke for 50 minutes on the importance of understanding people. He stressed the importance of knowing their strong as well as weak points, and how to get the most out of them from an accident prevention point of view. Mr. Baumann emphasized how all people are alike in what they want—to belong, to achieve recognition, to know what goes on and to be able to talk to the boss. A film showed how people are alike but how they differ in going about achieving what they want.

How does one maintain continuing interest in a safety program? Mr. Ruoff answered this question, emphasizing the importance of, as he put it, "establishing a favorable climate by unqualified support from management." He stressed the importance of everyone in the company knowing that this exists. He said his own company does this by showing their company safety creed: "Our duty is to plan and perform every job safely. No job is done well unless it is done safely." This creed is signed by the president, E. R. Acker.

Mr. Ruoff displayed a number of visual aids depicting accident prevention principles and effective accident prevention activities. Two company placards listed the names of company personnel who are members of two clubs—the "Turtle Club" (hard hats) and the "Wise Owl Club" (eye protection). Rosters are kept up-to-date on these large placards, and members who have experienced accidents but were saved from serious or fatal injury by the use of protective equipment worn at the time, are listed.

A 35mm sound slide film was shown giving additional ideas and techniques in creating and maintaining interest in a safety program.

The wind-up of the course was the summary by Mr. Papich of the two-days' activities. This was in the form of a discussion and answer period with the objective of each presentation reiterated.

At the conclusion, everyone present agreed and understood, and most important of all, accepted the theme of the course—"Accidents don't happen; they are caused."

# Topics set for Eastern meeting

New York's Park Sheraton Hotel will be the scene of the first annual Eastern Gas Sales Conference, which takes the place of two former separate meetings—the Eastern Natural Gas and New York-New Jersey sales conferences.

The meeting will be held May 7-8 and is sponsored by the A. G. A. Residential Gas Section and will be directed by A. J. Hartman, Consolidated Edison Company of New York, Inc., the 1956 chairman. Delegates are expected from New York, New Jersey, Kentucky, Maryland, Ohio, Pennsylvania, Virginia and West Virginia.

Leading speakers from within the gas industry will speak on a wide variety of topics relating to the sale and promotion of domestic gas appliances.

The first day's sessions, with Mr. Hartman in the chair, will open with an address by Dean H. Mitchell, president, A. G. A., and president of Northern Indiana Public Service Company. He will report on Association activities of primary concern to sales personnel.

New and vigorous promotions of home laundries as a builder of gas load will be the subject of K. F. Muldoon, manager of A. G. A.'s New Freedom Gas Kitchen and Laundry Bureau.

One aspect of the laundry, gas dryers, will be discussed by D. C. McDermand, Hamilton Manufacturing Company. Mr. McDermand will report on the market potentials of clothes dryers and offer suggestions on how best the gas utility can capture this market.

A preview of A. G. A.'s national advertising will be presented by Adolph Toigo, president of Lennen and Newell, Inc., the agency now handling A. G. A.'s account. Mr. Toigo will deal specifically with the question how a utility can tie-in with national advertising to obtain maximum benefit on the local level.

Another topic for the afternoon session will be a national TV show for the gas industry. A speaker will bring the audience up-to-date on developments leading to this goal.

New appliances as sales aid is topic of E. Carl Sorby, Geo. D. Roper Corp.

Dean Mitchell will open conference with report on A. G. A. activities

The role of home service in sales of gas appliances will be discussed by Mrs. Eleanor Wiese, Public Service Electric and Gas Co., chairman of the A. G. A. Home Service Committee.

A popular speaker at last year's New York-New Jersey sales conference will be back again, this time with a topic of direct interest to all gas men. Harry Bowser, who is now sales manager of Servel's home appliance division, will make a complete presentation on how to "Show, Tell and Sell" gas refrigerators.

The morning session on May 8 will have George W. Coulter, The Manufacturers Light and Heat Co., as chairman. C. S. Stackpole, A. G. A. managing director, will review the prospects for gas industry sales, particularly in the domestic market.

The highly important air conditioning load, and steps that must be taken by the gas industry to obtain its share, will be the subject of Robert H. Lowe, The Coleman Company. Mr. Lowe will report on developments in the field that can be expected to improve the gas industry's potential for gaining a greater share of the increasing year-round home air conditioning market.

How gas companies can enlist the vital aid of dealers in selling gas appliances will be the topic of Harry Price, a leading appliance dealer of Norfolk, Virginia. Mr. Price, who is nationally known as a leader of the National Appliance and Radio-TV Dealers Association and as one of the nation's most successful merchandisers of gas ranges, will present the dealer's point of view.

How to sell the new home market will be the subject of a panel discussion, with Mr. Coulter acting as moderator. H. A. Kievenaar, Boston Gas Co., and two other sales executives from gas companies will participate.

The other side of the coin, selling the replacement market, will be discussed by one of the gas industry's most noted speakers, E. Carl Sorby, Geo. D. Roper Corporation. Mr. Sorby will give a dramatic picture of the latest developments in gas appliances.

Conference luncheons will be held each day, with a prominent speaker as a guest at the Tuesday luncheon.

## Economics and sales

*(Continued from page 17)*

Other considerations include the relative newness of a product, introduction of competitive products and, for regional studies, special local conditions.

For illustrative purposes, response to income changes has been studied for range sales since this appliance is judged to be freer from non-income influences than most others. Sales of space heaters, for example, are influenced by the changing geographic distribution of the population. Certain other appliances show a strong growth trend because they are relatively new. Heating equipment in general probably shows less responsiveness to income than do other appliances, since breakdown is probably the major reason for replacement sales, and replacements represent a large proportion of total sales.

Recent competition from electric ranges is a major non-income distortion of sales of gas ranges. The combined total of gas and electric range sales, though, can be considered in terms of income influences, since it represents, by and large, satisfaction of the total demand for major cooking devices.

In addition, reliable historical data are more readily available for ranges than for many other appliances. With sufficient data, however, sales of other appliances are also susceptible to similar analysis, although the method may be more complex.

In the two illustrative analyses which follow, the two factors that were compared were range shipments and income. Number of ranges shipped is the only historical series available, rather than dollar volume of retail sales of ranges. For the sake of comparability, therefore, it was necessary to adjust the series on income for changes in the value of money over the years.[1] That is, the equations are derived on the basis of "real" sales (number of units) and "real" income (adjusted for price change).

For the period 1930-1955 (omitting 1942-1946, inclusive) a given per cent change in real income produces, on the average, a per cent change approximately 1.6 times as great in sales of ranges. The equation is of the form:

$$Y = .00072 X 1.647$$

(Y represents thousands of ranges sold, and X is millions of dollars of real income.)

The equation says that there is one and only one "true" volume of sales warranted by a given income level—the volume calculated from the equation. Therefore, if real income in 1965 is expected to be 10 per cent greater than in 1955, then 1965 sales volume can be expected to be up about 17 per cent, not over actual 1955 sales, but 17 per cent greater than "true" sales that the equation would have calculated for the 1955 level of income.

This method is singularly inflexible. It completely fails to recognize the radical change in consumer buying patterns in recent years—the shift in levels of purchases of specific commodities relative to income. Furthermore, for statistical reasons it is likely to become poorer the farther into the future it predicts.[2]

In order to overcome the faults inherent in the classical method, an alternative equation was developed. Here, the per cent change from one year to another in number of units sold was compared to the corresponding year-to-year per cent change in income. (For simplicity of calculation, these changes were expressed in index form: 106.5, 98.6, etc.) The equation is as follows:

$$\text{Index } Y = -228.1 + 3.226 \text{ Index } X$$

(Index Y is change in sales, Index X equals change in income)

By substituting various predicted changes in income in the equation, it can be interpreted as follows:

1) If income is up 10 per cent over the previous year, then sales should increase about 27 per cent.

2) If income remains the same, the sales will decline about 5½ per cent.

3) If income drops 10 per cent from the year before, shipments should decline about 38 per cent.

A decline in sales when income remains the same probably stems from the fact that people feel poorer when their income remains constant, as well as from a declining trend in the proportion of their income consumers devote to range purchases.

Constantly referring the forecast to change from the most recent actual figures, income and sales for the previous year, tends to keep the forecast in line with the most current trend. (It is desirable to recompute the basic equation annually as actual data for the year become available, although it may not make any great change in the equation.)

In other words, although the relationship between per cent change in sales and per cent change in income is derived from the average of historical fluctuations, the forecast *volume* of sales is keyed to the continuation of the current level of sales and income.

This method breaks down when there are violent year-to-year variations in the sales income pattern, when a year of overbuying alternates with a year of underbuying. Then the basic assumption—that people will continue to act as they have acted, at least for another year—simply does not hold. Such alternation is not experienced frequently, although recently the current slowdown in automobile sales has been explained in terms of this type of adjustment, as was the minor recession of 1949.

Even the existence of wide year-to-year changes in sales levels need not prevent the use of the alternative method for forecasting. Instead of the most current year, an average of the two, or three, or five most recent years can be used as an artificial "base year" from which changes are measured.

If sales in a given year are known to have been greatly influenced by a nonrecurrent phenomenon it would not be wise to use that year as a basis for predicting or judging future years; a more normal base period would be preferable. For example, 1950, the year of the Korean scare-buying spree, would be a poor year to use as a standard, assuming a continuation of "peaceful" international

[1] Strictly speaking, a further variable should be added to the equation showing the relationship between the price index of ranges and the over-all price index (the income adjustment factor). Since the price index of ranges is unknown, the compromise measure adopted assumes that the relationship is a fairly stable one, and will continue to be so.

[2] A regression equation is primarily valid within the range of values upon which it was calculated. Since real income is expected to continue to increase with the growth of the country, it will surely lie outside that range.

## Favorable comment

● Industrial concerns interested in establishing branch plants in southern California will now receive reprints from an article in December's "Industrial Gas" magazine. The article, entitled "Revolution in Southern California," was written by A. Q. Smith, A. G. A. Industrial & Commercial Gas Section publicity director. It has caused such favorable comments in the area that the Chamber of Commerce is planning to use it for mailings.

relations.

Another difficulty which may limit the value of historical relationships as a predictive guide to the future is the existence of artificial influences on past sales. If during one or more past years, special industry promotional efforts were exerted to increase range sales, then sales in those years will represent the combined effect of that year's income level and promotional effort (and possibly other significant factors), with no feasible method for analyzing their relative quantitative importance.

To the extent that this technique is used to measure the effectiveness of future promotional programs, such distortions of historical data might introduce undesirable inaccuracies. On the other hand, there may be some compensating tendencies which minimize the effect of this factor over a series of years.

The primary importance of the consumption function is its use in forecasting. To use these equations for forecasting gas range sales a two-step procedure is required. First, total shipments of gas and electric ranges are calculated by substituting a reliable forecast of income (or change in income) in the equation. Then both forecast and potential gas range sales are derived by introducing probable and potential estimates of consumer buying preference.

The method is not limited to forecasts for a single year. It can also be adapted to forecasting average annual sales for a three, or five, or ten year period, given estimates of average annual income for the desired period. Suitable forecasts of disposable personal income as well as other measures of the national economy, for either long-term or short-term trends, are published by the Twentieth Century Fund, the National Bureau for Economic Research, the United States Chamber of Commerce, the President's Council of Economic Advisors and other government agencies and private organizations.

The development of similar equations for local areas is completely feasible, using comparable techniques, providing that appliance shipment and income data are available for the area in question. It should be emphasized that application of national averages to local situations is risky, and should be avoided except as a last resort.

Local Chambers of Commerce may publish historical series and forecasts of income for cities, although their objectivity should be appraised in many instances. More reliable figures are sometimes developed for counties, sections, and state by the Economic Research Bureaus of universities and by individual state Departments of Commerce. Disposable personal income by state is published by the U. S. Department of Commerce, as well as by several of the regional Federal Reserve Banks. Almost all of these sources occasionally issue forecasts as well.

Sales data present another problem, especially since electric range sales figures are also needed. If a utility merchandises both gas and electric appliances and has some facts indicating that its sales experience is typical of the area, then its historical sales figures can be used, preferably as year-to-year per cent changes in the second method.

Such data are easiest to obtain, but must be examined most carefully to analyze their value. For example, if a utility has extended its service, and hence its merchandising operations, into new cities during the period under analysis, sales figures would be distorted. A similar result would occur if any changes in relative utility vs dealer sales had been effectuated, or if certain manufacturers had significantly altered their channels of distribution.

## Dealers may help

Alternatively, a large appliance dealer, or the local merchants association, may be willing to supply at least annual per cent changes in number of units sold, if not total unit sales.

Non-income factors are likely to have a greater influence on sales on a local level than nationally. In the national picture local variations tend to cancel one another out, or are small enough to be lost in the aggregate.

For a given region, though, the introduction of natural gas may provide a non-income stimulus to appliance sales, or a natural disaster may necessitate replacement of many household goods, or special safety campaigns may lead to wholesale replacement of certain appliances. Obviously, to include such years in a mathematical analysis of income influence is fallacious unless steps are taken to account for the distorting influences.

There are many variations of the type of analysis that predicts the future by mathematical study of the past. One of the more common variants is the expression of sales per capita or per family as a function of per capita or per family income. The reasoning behind the approach is this: over a sufficient period of time, practically any two aggregates will show a statistically significant correlation, simply because they are both part of the steady world-wide growth trend.

Working with per capita or per family consumption tends to minimize any apparent relationship that may be due only to parallel growth trends in the aggregate figures. In order to use this type of equation for prediction, population (or family) forecasts are necessary in addition to income projections.

Another method is the so-called residual method, which tries to modify statistical relationships with human judgment. First a basic trend line or regression line is calculated, often using methods similar to those described above. Then the forecaster estimates the residual—the amount by which actual sales will vary from the trend.

Sometimes the residual is estimated from its own trend line, sometimes by analogy with previous similar periods, often subjectively on the basis of the forecaster's familiarity with the field. The combination of the calculated trend value with the value of the residual produces the forecast that is used.

A completely different and most promising approach to the question of how income affects spending habits is embodied in the Federal Reserve Board Surveys of Consumer Finances. Forecasts are based upon consideration of consumers' expressed intentions to purchase or not to purchase. In recent years these forecasts have corresponded fairly closely to actual sales.

Instead of analyzing aggregates of total income and total sales, this method tries to separate people into types according to their current and past income and financial position, their expectations of future income changes, their optimism or pessimism about economic conditions, and their general social characteristics. Investigations are now in progress to determine which people with what combinations of characteristics tend to fulfill or not fulfill their purchase plans, or habitually to purchase without prior planning.

There are hopes that through repeated surveys some general rules will emerge that will enable forecasters to distinguish between purchasers and non-purchasers according to the traits they display.

## Facts and figures

*(Continued from page 20)*

compiled by the National Electric Manufacturers Association and are reprinted by GAMA in its releases. Data relating to oil-fired burner installations are compiled by Fuel Oil and Oil Heat. Data on both gas and electric dryer shipments are released regularly by the American Home Laundry Manufacturers Association.

Total sales of the gas utility and pipeline industry to ultimate consumers during January, 1956 aggregated 8,393 million therms, up 16.4 per cent over sales of 7,212 million therms in January of last year. This was a new record high for any month on record. Colder weather and an increased number of customers, particularly gas heating customers, contributed to the new record in gas sales.

Sales of gas to industrial users were up approximately 6.4 per cent. Industrial production, as measured by the Federal Reserve Board index remained unchanged from the all-time high of 144 (1947-1949 = 100) reported in the previous two months, up 9.1 per cent over January of last year. The Association's January index of gas utility and pipeline sales is 239.8 (1947-1949 = 100).

During the 12 months ending January 31, 1956 total utility and pipeline sales of gas aggregated 69.2 billion therms, equivalent to a gain of 12.1 per cent over the 61.7 billion therms consumed in the 12 months ending January 31, 1955.

## National TV show

*(Continued from page 12)*

or complete substitution for the utility's present local program with very little additional cost to the utility. In other cases, the national program would be in addition to it.

There will be provided with each program high quality commercials acceptable to the industry, dealing with seasonable gas industry promotions and tying in closely with national gas industry print advertising. There will, in addition, be specialized commercials on public relations, private ownership, Mrs. America, and other subjects of general industry interest.

The national television program will be administered so as to provide complete local utility identity. At the opening and close of each program, the local utility will be identified by visual drop card.

During any program, a local commercial may be substituted, entirely at the discretion of the local sales manager. This can be done by special arrangements with the local TV station. The national television program is in reality a local program so far as utility control is concerned, but is national, in that it is put on during the most popular evening hours and provides a type of entertainment and size of audience far superior to any program that could be obtained locally.

You must understand that this is no Community Chest drive—no solicitation of funds for a benevolent cause. Instead, we have the best promotional and advertising package ever offered to a gas utility. This national television program will offer each utility the best and highest type of program obtainable. The local utility will, in one leap, be an equal to the best known national television advertisers—the GE's, the Frigidaires, and the Westinghouses.

This national television program is the only way, in almost all TV reception areas, whereby the utility can obtain class "A" time with its enormous audiences —and with its very high percentage of adult viewers. As you well know, when your volume goes up, your costs go down; and the same applies to TV audiences. The cost per thousand adult viewers with a national television program is almost always lower than with a local program on class "B" or "C" time. Also, the opportunity of reaching all of your customers at one time or another is greatest on "A" time. For this very practical reason as well, the Television Committee looks with confidence toward a national gas industry television program early in 1957.

I hope that your member utilities will subscribe 100 per cent to this program; and that they will subscribe early, as an example to the rest of the country.

The time is short and the need is great, so your prompt and enthusiastic support will render a real service to our industry.

Firm utility commitments must be in hand by July 1, 1956, to insure obtaining a satisfactory program by Jan. 1, 1957. That is considered the latest date that this program can begin.

## Industrial relations

*(Continued from page 14)*

gence, and will be high-priced.

(b) Programmers will translate your systems into computer instructions and may become future systems analysts. Select them from any department, as long as they are adaptable to this type of work and can handle the details logically. It is understood that it takes at least six weeks to train in the essentials and up to a year to develop a semi-skilled programmer.

(c) Operators will run your computer equipment and should know enough to insert data and guide the maintenance men to the trouble spots.

(d) Equipment experts are engineers and maintenance technicians.

(e) Management scientists are operations researchers, statisticians, etc. Some companies are including them in computer study teams and on permanent computer staffs.

For more information concerning this subject, see the article "What Computers Can Do for You" by Morley G. Melden in the February 1956 issue of *Factory Magazine*.

● **NLRB rulings**—*Strikers can't knock product*—There was a strike at the Patterson-Sargent Company, Cleveland paint manufacturer. Six of its striking employees warned customers to stay away from paint manufactured by the non-strikers. They lacked the proper know-how. The six were fired and the discharge was upheld by an NLRB Trial Examiner.

*"No union" choices removed from NLRB severance ballot*—The National Labor Relations Board decides that in future *severance* elections it will not provide a place on the ballot for a "neither" or a "no union" choice. The board makes its decision after reviewing the principles it established in the American Potash and other severance election rulings.

The new policy is announced in a board order for an election among electricians at the American Tobacco Company, Inc., Louisville, Ky., requested by Local 369 of the International Brotherhood of Electrical Workers. The production and maintenance unit at the plant is represented by Local 247, Tobacco Workers International Union.

The board says that it has decided to eliminate the "neither" or "no union" choice in severance elections because there is nothing in the Taft Act, or in its legislative history, which requires employees in such a vote to be given an opportunity "to return to non-union status."

Thus, the board says, "it is our considered opinion that the 'neither' or 'no union' choice serves no useful purpose and should be eliminated from the ballot in elections limited to the severance issue."

# Industry news

## Plumbers rent commercial water heaters

THE New Jersey Natural Gas Co., Asbury Park, has announced the introduction of a commercial water heating rental program through plumbers in Monmouth and Ocean counties.

Details of the plan were announced to about 75 plumbers at a recent meeting at the Sanitary Supply Co., Avon.

Under the plan, Ruud 80-80 hot water heaters, which have a recovery of 80 gallons an hour, will be available for rental at $10 a month for commercial establishments and institutions, such as schools and hospitals.

The entire program is conducted through plumbers, with installation being made by the plumber selected by the customer. The heaters are being supplied by the Sanitary Supply Company. The gas company will handle the monthly billing of the rental charges to the customer.

## Mid-West Gas Association hears story of gas industry progress

AMERICA'S gas industry is in the midst of a dynamic marketing and sales revolution, speakers at the fifty-first annual convention of the Mid-West Gas Association reported last month. The three-day sessions in Omaha were attended by an overflow audience of nearly 470 persons.

George B. Johnson, Minneapolis Gas Co., Minneapolis, Minn., was elected president of the Mid-West Gas Association. Other officers elected were: first vice-president—P. C. DeHaan, Iowa Power and Light Co., Des Moines, Iowa, and second vice-president—H. R. Slocum, Central Electric & Gas Co., Columbus, Nebraska. Everett E. Baxter, Central Electric & Gas Co., Lincoln, Neb., was re-elected secretary-treasurer.

The retiring president, M. K. Wrench, Metropolitan Utilities District, Omaha, noted that a major objective of the Mid-West Gas Association is the friendly exchange of information and ideas. He read and endorsed a letter from Dean H. Mitchell, president of American Gas Association, seeking support for a series of public relations workshops to be held in the Mid-West region. Later, the association's executive council unanimously agreed to cosponsor a pilot public relations workshop with A. G. A.

Mr. Mitchell presented a word picture showing how A. G. A., "The House that Gas Built," is working for its members throughout the country. "Predictions are," he said, "that in the near future, the American people, seeking the finest year-round air conditioning on the market, from the standpoint of economy, comfort and efficiency—will find the answer with gas."

A stirring appeal to tell the story of the gas industry's accomplishments and glamorous new developments was voiced by C. S. Stackpole, managing director of A. G. A. He noted that subscriptions to the industry's PAR (Promotion, Advertising and Research) Plan are at an all-time high and that plans are underway to launch a $2 million national TV program. The new thermostatically controlled top burner for gas ranges is the greatest thing that has happened in the gas business, he added.

Addressing the general luncheon on Monday, March 19, H. R. Slocum, president, Blue Flame Gas Association, outlined that organization's work on the promotion and sale of better gas equipment in Nebraska.

George Martin, Geo. D. Roper Corp., director of the marketing research board, Gas Appliance Manufacturers Association, showed that the gas utility is in reality a retailer. Its products are heat, comfort, convenience, tasty food, smoke-free kitchens, economy, peace of mind and dependability. Using charts, Mr. Martin underscored the need for increased marketing research to define objectives, help insure investment, and assist in day-to-day sales promotion.

"How to Retain Full Gas Load in Face of Today's Competition" was tackled by a panel moderated by A. M. Schultz, Minneapolis Gas Company. Serving on the panel were: W. V. Bell, Metropolitan Utilities District; S. M. Johnson, Minnesota Valley Natural Gas Co.; Lee Berkheimer, representing Carl J. Olson, Central Electric & Gas Co.; and J. Roscoe Furber, Northern States Power Company.

The panel concluded that local utilities should build closer cooperation with builders, dealers and appliance distributors, and that stronger efforts should be made to promote the advantages of built-in ranges and gas dryers.

John F. Merriam, president, Independent Natural Gas Association and Northern Natural Gas Co., Omaha, declared that the gas industry is in "a superbly strong position despite the recent controversy in our ranks."

He stressed that for the first time all elements of the gas industry are interested in telling their stories to the public. Nevertheless, Mr. Merriam asserted, "the public has received the impression that dozens of rate increases are piling high one upon the other and the price of gas will soon be beyond the reach of the householder."

He urged all segments of the gas industry to "try to tell the public the rate story . . . give them the facts . . . so they can discuss the problem intelligently."

Morris E. Jacobs, president, Bozell & Jacobs, Omaha advertising agency, urged producers, transporters and distributors to coordinate "every program of employee information, every program of public relations and public information at the local and regional levels. . . . In no other industry in the world are three component parts so dependent on each other as in the gas industry," he declared.

Origin and progress of the Gas Industry Development Program was outlined by R. L. Stephenson, Lone Star Gas Co., Dallas, Texas. He discussed results of the Action Demonstration Program in Abilene, Texas, and urged other companies to undertake similar projects.

Howard D. White, executive vice-president, Liquefied Petroleum Gas Association, outlined the "success story" of the LP-Gas industry. He noted that A. G. A. and LPGA are considering a joint program that would be beneficial to both industries.

In a film presentation, Clifford Hall, The Coleman Co., Inc., Wichita, Kan., emphasized that outcome of the present battle for air conditioning will also determine the future of the nation's heating load.

**Newly elected officers of the Mid-West Gas Association are (l. to r.): P. C. DeHaan, Iowa Power and Light Co., 2nd vice-president; Everett E. Baxter, Central Electric & Gas Co., secretary-treasurer; George B. Johnson, president; and H. R. Slocum, Central Electric & Gas, 2nd vice-president**

# Sign Puget Sound's first natural gas industrial contract

GLADDING-McBEAN Company, manufacturer of brick and clay products, has signed the Puget Sound (Wash.) area's first industrial contract for natural gas, an agreement calling for an expenditure of nearly $400,000 over a five-year period.

Over 1,000,000 cubic feet of natural gas per day will be fed to the plant from a special 8-inch lateral, which will also serve other Renton industries and housing developments, and which will be connected with Washington Natural's South Seattle supply main east of Renton, Mr. Fratt said. The system will be completed before natural gas arrives in the fall.

The Gladding-McBean contract is the first of several which Washington Natural expects to receive in the next few weeks, Mr. Fratt said. Proposed contracts, involving over 50,000,000 cubic feet per day, have been presented to about 35 industrial firms of the area, he said.

Gladding-McBean will use natural gas to fire one continuous kiln, four periodic kilns, a rotary kiln, miscellaneous auxiliary furnaces and a 200-horsepower boiler. The company manufactures fire clay refractories, high temperature mortar and cement, facing brick, clay sewer pipe, and clay flue lining at Renton and at Mica, Washington, near Spokane.

# NEGA annual business conference stresses sales activities

THE INCREASED emphasis on sales and public relations activities in the gas industry was the main theme of the recent annual business conference of the New England Gas Association. More than 500 delegates attended the meeting which was held at Boston's Hotel Statler, March 22-23.

Officers for the coming year, elected at the conference, are: president, Fred H. Faulstich, vice-president, Springfield Gas Light Co., first vice-president, Edgar G. Rhodes, president and general manager, The New Britain Gas Light Co.; second vice-president, Andrew W. Johnston, vice-president in charge of gas operations, Boston Gas Co.; and treasurer, Otto Price, vice-president in charge of accounting, Boston Gas Company. Mr. Johnston and Gordon G. Howie, Cambridge Gas Co., were presented with NEGA Accomplishment Awards for outstanding service.

First speaker was Clark Belden, NEGA managing director, who reviewed the high points of the association's past year. He discussed the four leading problems of the gas industry: "Two of them cover performance—service and safety—while the other two cover acceptance—sales and public relations." Mr. Belden stated that gas utilities "must work in part *directly* upon sales and public relations, as well as working in part *indirectly* upon them through improved performance results in the service and safety areas."

Speaking on "What Is Past Is Prologue," Harold E. Ayer, retiring president, emphasized the importance of the present, and the future. Competition, he felt, is important for keeping the members of the industry alert and up-to-date. He concluded by warning that competition also demands that the industry must continue to arm itself in every possible and effective way if it is to maintain its strength.

A panel on "Building Desirable Group Relationships" was held Thursday afternoon, with Paul V. Hayden, The Connecticut Light and Power Co., acting as chairman. Panel members from the gas industry were Robert M. Brigham, Springfield Gas Light Co., and Charles E. Downing, Eastern Gas & Fuel Association. Other participants were: Virgil Rankin, public relations consultant; Richard P. Axten, Raytheon Manufacturing Co., and Frederick Bowes Jr., Pitney-Bowes, Inc. The panel discussed many aspects of the problem, including relationships with employees, customers, communities, and stockholders, and government.

NEGA's National Gas Industry Panorama, a symposium, was held Friday morning with William B. Hewson, The Brooklyn Union Gas Co., as master of ceremonies. First speaker was Harold Massey, GAMA managing director, who told of the numerous innovations and improvements in gas appliances.

Thomas Lee Robey, A. G. A. coordinator of research, then spoke on "Let's Look at the Heat Pump." He discussed the competitive aspects of the heat pump, and in particular, reviewed its operation, revealing that it is "neither new nor magic." He said that the gas industry, however, must be on guard to see that the public is not overwhelmed by the heat pump.

Christy Payne Jr., The Peoples Natural Gas Co., discussed A. G. A. and GAMA promotion and advertising. Mr. Payne, chairman of the A. G. A. Promotional Planning Committee, detailed the promotion and advertising aspects of the PAR Plan. He said that in this area of the co-op, PAR has made effective use of its funds by cooperating with others in its activities. He cited as examples the editorial sections which magazines devoted to the gas industry in connection with PAR advertising; the Mrs. America contest with its new co-sponsors, DeSoto and Colgate; and the many manufacturers which cooperate by advertising in special gas industry sections of magazines.

A national television program for the gas industry was discussed by Frank H. Trembly, Philadelphia Gas Works, A. G. A. Television Committee chairman. Mr. Trembly's speech appears on page 11 of this issue. Following Mr. Trembly's presentation, a brief talk was given by Mrs. Massachusetts.

Concluding speakers on the symposium were Remick McDowell, The Peoples Gas Light & Coke Co., chairman of the A. G. A. General Public Information Planning Committee; Willard F. Rockwell Jr., Rockwell Manufacturing Co., GAMA president; and Dean H. Mitchell, Northern Indiana Public Service Co., A. G. A. president.

Mr. Mitchell, whose topic was "Shake Hands with the Future," gave an over-all picture of the gas industry today. He declared that "The industry is expected to spend more than $4.3 billion in the four-year period from 1955 through 1958. Slightly more than $4 billion of that total will go for natural gas expansion." Mr. Mitchell warned that "If we are to march up to the future to shake hands with it, we must do so as a united industry."

Friday afternoon was devoted to a panel discussion, "Cooperating with Our Industry Allies," with Henry A. Kievenaar, Boston Gas Co., acting as chairman. Gas industry panel members were Charles A. Byron, The Connecticut Light & Power Co., and Julius Klein, Caloric Appliance Corporation. Other panel members were H. C. Gurney, Surface Combustion Corp., R. Louis Towne, Plumbing and Heating Wholesalers of New England, and Charles P. Pieper, Charles P. Pieper, Inc.

**NEGA officers depicted above are: Seated (l. to r.), Fred H. Faulstitch, incoming president; Harold E. Ayer, retiring president; and Edgar G. Rhodes, first vice-president. Standing (l. to r.), Andrew W. Johnson, second vice-president; Otto Price, treasurer; H. Coleman Moore Jr., assistant treasurer; and Clark Belden, treasurer**

# Gas industry comes to Portland's aid

WHEN a fire broke out at Portland Gas & Coke Co., Portland, Ore., Friday night, Feb. 24, service to 61,000 customers was disrupted. Turnoff procedures were begun immediately by the utility's staff and by Saturday evening over 200 experienced servicemen had already arrived in Portland by air from gas companies in British Columbia, Washington, California, Arizona, Colorado and Utah.

By Sunday night, this extra force had been built up to almost 500, from places as far away as the East Coast. Innumerable additional offers of assistance were beyond the Portland utility's capacity to accept.

On Monday afternoon, over 50,000 customers had been turned off, service had been restored to 15,000, and the light-up was proceeding at a rate of 2,000 per hour. Monday newspapers were profuse in their congratulations to Portland Gas & Coke for the efficient way in which service was being restored.

An editorial in the *Oregon Journal* said, "The company let the public know the full import of the situation immediately, and told exactly what it was doing. We think that fact was extremely important and reassuring. It is when people don't know what is going on that rumors fly and confusion follows."

In a letter to stockholders, President Charles H. Gueffroy said, "The company is very proud to be associated with an industry, the member companies of which have come to its aid so quickly, efficiently and graciously. As a result of this fine cooperation the public is again receiving service much more quickly than would have been the case had it been necessary to handle this tremendous job with only our own employees. The press, radio and television stations were most cooperative during the emergency and to them we are indebted, as well as to the police and fire departments and other municipal authorities. The company's customers also exhibited a very sympathetic understanding."

The fire originated in the company's generating plant as a result of oil accumulation in a blast air line, and jumped to the basement of the building. The intense heat ruptured fittings on the make oil preheaters, thus feeding the flames with the company's main oil hot supply. Before the flame was extinguished, all oil supplies to the generating building and the power house were completely disrupted and extensive damage occurred to the main electrical control system for the generators. Before partial service was restored at the plant, the company had lost pressure on 85 per cent of its system.

# Injury-free since '34

**Consumers Power Company's central division gas distribution department wins A. G. A. Safety Merit Award for outstanding work—over 21 years (1,003,214 manhours) without a disabling injury. T. M. Holmes (right), division gas foreman, accepts award from Vice-President J. H. Campbell as Safety Director I. R. Dohr (left) looks on**

# April "McCall's" lauds top burner temperature control

COOKING EASE with Robertshaw-Fulton's new automatic top burner temperature control was depicted in full color in the April issue of *McCall's*. "We tested one of the first gas ranges (Roper) with a 'thinking' burner and found that it completely frees the housewife from potwatching," says Elizabeth Sweeney Herbert, household equipment editor, in the article entitled "The Burner with a Brain."

The article goes on to say that the control "Makes cooking pretty easy, we found. It also makes it possible to keep food warm an hour or more; a pressure cooker becomes a really automatic appliance; and tricky sauces are as easy as boiling water."

The article is part of an "Automation in Cooking" feature, third in a series of "Automation in the Home" features. The April issue of *McCall's* also contains the first published time chart for automation-cooked foods.

# Transcontinental announces $54 million expansion plan

TRANSCONTINENTAL Gas Pipe Line Corp., Houston, has announced that it has filed an application with the Federal Power Commission to expand by 105 million cubic feet the daily allocated capacity of its system. Construction would begin this summer in nine states.

An early approval by the commission would provide 80 million cubic feet of the new capacity before the 1956-57 heating season. Construction to provide the other 25 million cubic feet of proposed capacity would be completed in 1957. The 1956 expansion, together with other projects and completion of work begun in 1955, would bring the construction outlay this year to approximately $54 million.

Transcontinental's allocated capacity for the 1956-57 heating season would be 785 million cubic feet daily, supplemented by peak day deliveries from present storage of 136 million, to total 921 million cubic feet.

A substantial portion of the increased capacity will serve the New York City-New Jersey market where Transcontinental is the major supplier.

Two principal utility customers, the Consolidated Edison Company of New York, Inc., and Public Service Electric and Gas Company of New Jersey, are converting their distribution systems from a present mixed gas supply to straight natural.

The additional capacity would also increase deliveries to present customers and furnish service to new customers in the Piedmont area. New customers to receive Transcontinental natural gas in the Piedmont include Piedmont Gas Co., Hickory, N. C., several additional towns in Georgia served by the Mid-Georgia Natural Gas Co., and the tidewater areas of North and South Carolina to be served by one or more of the companies now seeking authorization.

# Youngstown and Tappan plan combined merchandising program

YOUNGSTOWN KITCHENS and Tappan Stove Company will launch a combined merchandising program on "built-in" cooking equipment early this spring, C. D. Alderman, Youngstown's vice-president in charge of sales, and W. R. Tappan, vice-president and general manager at Tappan, have announced. The move is being made to put both firms in a stronger merchandising position in the fast growing built-in range and "package" kitchen business.

Range tops and ovens merchandised under the plan will bear a new brand name, Youngstown-Tappan, and will be sold through Youngstown distributors. An estimated 75 per cent of these distributors already carry the current Tappan built-in line.

The kick-off campaign for the combined program will promote a variety of cabinets and cooking units, produced as a result of the new agreement.

Youngstown will have star white, dawn yellow, meridian blue, and sunset copper steel base cabinets to accept Tappan range tops of either stack-on or set-on types. Base cabinets of the same colors will also be available for ovens of Lusterloy or Copperloy finish. Gas ovens themselves will be produced with "matchless" lighting and completely automatic timing controls as added features. Range tops are being produced in either 24-inch, 30-inch, or 36-inch sizes.

The new merchandising system makes production and sales fully compatible and will be backed by Tappan's 90 sales representatives and nine "built-in" specialists. An advertising and promotional program is being started by both companies, and the Tappan service organization is making plans to train Youngstown servicemen in factory and field methods.

# Booklet forecasts vital role for gas industry in atomic age

a PAR activity

IN THE foreseeable future, atomic energy will supplement but not supplant gas, oil and coal, American Gas Association forecast today. Latest available scientific and engineering information indicates that the so-called "conventional" fuels (gas, oil and coal) will play a vital role in America's expanding economy for many years to come.

This conclusion is drawn by the new booklet, "Gas and the Atom," published by A. G. A.'s Public Information Bureau. It answers 18 commonly asked questions to dispel some of the myth, mystery and misunderstanding about atomic energy.

The booklet reveals, for example, that two independent groups of scientists anticipate a 50 per cent increase in total U.S. energy needs during the next 20 years. Atomic energy will help to supply this increased demand for fuel. "Gas and the Atom" visualizes the atom as a partner that will help gas, oil and coal to meet these tremendous energy requirements.

The booklet also reveals that radioisotopes, a by-product of atomic energy production, are already proving useful to both the gas and oil industries. Isotopes are being used by geologists to help find new supplies of gas and oil and to detect and eliminate flaws in pipelines.

"Some day it may be necessary to supplement our gas supplies through synthesis of coal," the booklet notes. "Atomic energy might well be the force to bring this about, thus assuring a continuing flow of gas, the ideal fuel." "Gas and the Atom" also points out that the gas industry has become one of the nation's largest industries, supplying 25 per cent of America's energy requirements in 1955. Between 1940 and 1955, marketed production of gas more than tripled and the gas industry spent more than nine billion dollars for new construction. Gas industry employment increased by 50,000 and natural gas will soon be available to the entire nation.

Natural gas has many highly specialized uses in homes and industry which atomic energy could not displace, "Gas and the Atom" reports. In only one field would atomic energy appear to offer competition with natural gas—as a fuel to power electric generating stations. The most optimistic estimates give atomic fuel about one-fourth of all generation of electricity by 1975.

Copies of "Gas and the Atom" are being offered to local gas companies for distribution to schools, employees, stockholders, financial institutions, civic organizations and other interested groups. Single copies are available without charge from A.G.A. Prices for orders in quantity are as follows: 2 to 999 copies, 7¢ each; 1,000—9,999 copies, 6¢ each; 10,000 copies or more, 5¢ each.

# Plan special gas equipment section in 'Restaurant Management'

a PAR activity

ONCE AGAIN the gas industry will launch a strong advertising-promotion campaign in the May issue of *Restaurant Management,* the magazine which reaches over 32,000 members of the food service industry all over the country.

*Restaurant Management* will feature a special section designed to hold and expand the commercial gas load at the time restaurant owners are most interested in commercial equipment—during the annual National Restaurant Association Convention and Exposition.

The American Gas Association will lead off the special advertising section with a number of pages highlighting commercial gas equipment. It is expected that individual manufacturers will contribute about 40 pages of advertising, repeating the success of last year's campaign.

Following the Restaurant Show, A. G. A. will have available reprints of the section for utility distribution to restaurants and other commercial and wholesale consumers. The reprints will also be merchandised to almost 400 leading restaurant chain organizations and industrial catering firms, as well as to schools and colleges offering restaurant courses.

# Issue study on supplementing natural gases with oil gases

a PAR activity

AN ANSWER to problems faced by distribution companies which must supplement their natural gas supplies to meet peak loads is provided in IGT Research Bulletin No. 24, *Interchangeability of High-Btu Oil Gases and Natural Gases,* by E. F. Searight, H. R. Linden, D. L. Nicol and E. S. Pettyjohn.

It is based on work carried out in the utilization laboratories of the Institute of Gas Technology, Chicago, under sponsorship of the American Gas Association through PAR.

This study demonstrates the effect of operating conditions and modification with diluents on the substitutability of oil gases, and reports the maximum percentage of oil gas in mixtures of oil gas and base natural gas which exhibited satisfactory combustion performance on critical burners and critical and contemporary appliances.

# A.G.A. announces new publications during March 1956

LISTED BELOW are publications released during the past month, and up to closing time of this issue of the MONTHLY. Information in parentheses indicates the audiences at which each publication is aimed.

## ACCOUNTING

• **Compendium Committee Report, 1955,** first supplement to 1954 report (for accountants and libraries). An annotated bibliography of Accounting Section Material, 1953-54, written by Arthur Skelton, and available from Headquarters for $2.

## GENERAL MANAGEMENT

• **Cost Control in a Growth Period** by S. M. Campbell (for company executives). Obtainable from General Management Section for $.25.

## LABORATORIES

• **A Field Survey of Gas Appliance Venting Conditions**—Research Report No. 1243 (for gas companies, equipment manufacturers, city authorities). Written by H. L. Reed, and sponsored by A. G. A. Committee on Domestic Gas Research, this report may be obtained from the Cleveland Laboratories or from Headquarters for $1.50.

• **American Standard Approval Requirements for Central Heating Gas Appliances, Vol. II;** Gravity and Forced Air Central Furnaces, Z21.13.2-1955, effective Jan. 1, 1956 (for utilities, equipment manufacturers, city authorities). Sponsored by A. G. A., and available for $2 at A. G. A. Laboratories or Headquarters.

• **American Standard Approval Requirements for Central Heating Gas Appliances, Vol. IV;** Gravity and Fan Type Vented Recessed Heaters, Z21.13.4-1955, effective Jan. 1, 1956 (for utilities, equipment manufacturers, city authorities). Sponsored by A. G. A., and available for $2 at A. G. A.

## PAR

• **PAR Briefs, January and February 1956** (for gas company executives). Sponsored by PAR Committee, and available free of charge from Headquarters.

## RESEARCH

• **IGT Research Bulletin No. 24, Interchangeability of High-Btu Oil Gases and Natural Gases** (for all gas companies using high-Btu oil gas for standby purposes). This booklet is obtainable from the Institute of Gas Technology, Chicago, for $5. It was written by E. F. Searight, H. R. Linden, D. L. Nicol, and E. S. Pettyjohn.

## STATISTICS

• **Monthly Bulletin of Utility Gas Sales, February 1956** (for gas companies, financial houses). Sponsored by and available from Bureau of Statistics; free.

• **Quarterly Report of Utility Gas Sales, Fourth Quarter 1955** (for utilities, financial houses). Sponsored by and available from Bureau of Statistics; free.

# Highlights of cases before Federal Power Commission

Bureau of Statistics, American Gas Association

## Certificate cases

● **Atlantic Seaboard Corporation:** The company applied to the FPC for authorization to construct approximately 86 miles of pipeline in Virginia and West Virginia. Total cost of the project is estimated to be $8.5 million. The proposed facilities will enable Atlantic Seaboard to overcome in most part an estimated deficiency of 79.1 million cubic feet of gas on the peak day of the 1956-57 winter. Although its capacity would still be 8.5 million cubic feet short of meeting the total requirements after construction of the proposed facilities, Seaboard indicated that it could curtail its industrial load by that amount if a design peak day is encountered.

● **Coastal Transmission Corporation and the Houston, Texas Gas and Oil Corporation:** The FPC has received an application by Coastal Transmission for the authorization to construct and operate approximately 565 miles of pipeline line. The line would extend from a point near McAllen, in Hidalgo County, Texas, in a generally northeasterly and easterly direction, paralleling the Texas and Louisiana Gulf Coast, to a point on the east bank of the Mississippi River, near Baton Rouge, Louisiana. Coastal also proposes to construct and operate four compressor stations having a total installed horsepower of 26,000. In addition, Coastal proposes to construct about 272 miles of lateral pipelines, extending from its principal pipeline to various sources of its natural gas supply in east Texas. The initial design capacity of the pipeline will be 350 million cubic feet per day, with a peak-day capacity of 385 million cubic feet. Coastal proposes to sell the major portion of the gas transported to Houston, Texas Gas and Oil Corporation. The cost of the project is estimated to be $68.3 million. Houston, Texas Gas and Oil Corporation at the same time filed an amended application requesting FPC authority to construct and operate approximately 961 miles of 18 to 26 inch main transmission pipeline from a connection with Coastal's proposed facilities near Baton Rouge, La., in a generally easterly and southeasterly direction to a point near Miami, Florida. The facilities will include five compressor stations with a total installed horsepower of 32,000. In addition Houston proposes to construct approximately 496 miles of lateral pipelines extending from its main line and principal laterals to points of delivery to 98 wholesale and retail customers. The initial capacity of the project is to be 370 million cubic feet per day, with a peak day capacity of 385 million cubic feet and an ultimate daily capacity of 520 million cubic feet when fully powered. The estimated over-all cost of the proposed project is $105.8 million. The market to which Houston proposes to sell natural gas lies entirely within the state of Florida.

● **Iroquois Gas Corporation:** The FPC announced that the company has filed an application requesting authority to develop new underground storage area for natural gas and to construct 14 miles of delivery pipe, 22 miles of gathering and well lines; drill 16 wells; and reclaim or recondition 64 existing wells. The project also would include a 900 horsepower compressor station. The facilities are to be situated in Chautauqua, Cattaraugus and Erie Counties, New York. The estimated cost of the project is $2.9 million.

● **Natural Gas Pipeline Company of America:** The company has filed an application with the FPC for authorization to construct 389 miles of 36-inch pipeline paralleling its present line; to construct 91 miles of 30-inch loop line; to step up the system's total compressor station power from the present 151,500 to 194,500 horsepower; and to install two new 3000 horsepower centrifugal gas turbine compressor units at the contemplated junction with the new connecting line to be built by Colorado Interstate Gas Company. Total cost of the project is $80 million. It will enable Natural Gas pipeline to add 435 million cubic feet to the 522 million present level making 957 million cubic feet of natural gas daily capacity. Most of the gas would be purchased from Colorado Interstate which plans to build a connecting pipeline to join Natural's present transmission line, to move up to 350 million cubic feet of gas a day.

● **Transcontinental Gas Pipe Line Corporation:** The FPC has authorized the company to construct a 4,000 horsepower compressor station on its natural gas pipeline system in Evangeline Parish, Louisiana. The estimated cost of this station is $841,000. In addition, the company has filed an application with the FPC requesting authority to construct about 12 miles of pipeline and two meter stations. Estimated cost of the project is $707 thousand. The proposed new facilities will enable Transcontinental to take an additional 38 million cubic feet of natural gas per day from the Live Oak gas field in Vermilion Parish, Louisiana.

## Rate cases

● **Consolidated Gas Utilities Corporation:** The FPC has suspended a proposed $600,000 annual wholesale natural gas rate increase by Consolidated Gas Utilities. The proposed increase is 45 per cent over the rates now being collected by Consolidated for the sale of gas to Cities Service. Consolidated based the higher rates primarily on a proposed increase by Cities Service. The Cities Service increase is under suspension by the FPC. Consolidated sells natural gas to Cities Service, which in turn sells part of its gas back to Consolidated at another point on its system. The rate Cities Service charges Consolidated, however, is predicated on the rate Consolidated charges Cities Service.

In other FPC actions during the month both **Southwest Gas Corp.**, Barstow, Calif., and **Montana Power Company**, Butte, Mont., were exempted from regulation under the Natural Gas Act pursuant to the terms of the Hinshaw Amendment. The action on the part of the FPC brings to 81 the number of companies which have now been exempted, either fully or partially.

# Plan gas exhibit for restaurant exposition

**The Committee on Displays at National Expositions met recently to allocate space to the co-operating exhibitors in the A. G. A. combined commercial gas exhibit, which will occupy 4,500 square feet at the National Restaurant Exposition, Navy Pier, Chicago, May 7-11. Chairman of the committee (seated, center) is R. E. Crane, Elizabethtown (N. J.) Consolidated Gas Company**

# Gas air conditioning will be major A.G.A. convention topic

**Under chairmanship of Ronald A. Malony (Seated, center), the 1956 General Convention Committee met at Headquarters to make arrangements for 38th annual American Gas Association convention**

THE SIGNIFICANT progress made by the industry in gas air conditioning over the past year will be a major topic at the closing luncheon of the coming American Gas Association annual convention, it was announced by R. A. Malony, president, Bridgeport Gas Co., and chairman, A. G. A. General Convention Committee. Many important developments have resulted from research and design efforts of A. G. A. and individual manufacturers. These will be outlined and discussed at the wind-up meeting of the convention.

The General Convention Committee met in New York on March 7 to plan the program and make arrangements for the Association's thirty-eighth annual convention which will be held in Atlantic City, N. J., on Monday, Tuesday and Wednesday, Oct. 15-17. Speakers of national prominence will address the general sessions on important problems facing the industry, Mr. Malony said. Informative and productive programs are being arranged by the several Sections of A. G. A. The ladies' program will be entertaining and should be of special interest to the hundreds of ladies who are expected to attend.

# Coleman stages training schools on gas air conditioning

A SERIES of seven regional training sessions for utility engineering and service personnel directly interested in gas air conditioning is being conducted by The Coleman Company, Wichita, Kansas. Some of the gas utilities that will merchandise Coleman's gas motor air conditioning unit are cooperating with the manufacturer in staging the three-day training schools.

These are the Lone Star Gas Co., Dallas; Oklahoma Natural Gas Co., Tulsa; Atlanta Gas Light Co., Atlanta; Ohio Fuel Gas Co., Columbus; Southern California Gas Co., Los Angeles; The Brooklyn Union Gas Co., Brooklyn; and Iowa Power and Light Co., Des Moines. Training sessions will be concluded by April 20.

Clifford E. Hall, Coleman utility operations manager, said the Coleman gas-powered unit is now in limited production and that output of three-ton and five-ton sizes could be stepped up as soon as utilities were thoroughly acquainted with the principles and operating characteristics of the gas motor unit.

Representatives of approximately 150 operating utilities and distributors of LP-Gas are attending the current training sessions.

# Secretary McKay extends term of advisory council members

SECRETARY of the Interior Douglas McKay has announced that the term of the present membership of the Gas Industry Advisory Council has been extended to Dec. 1, 1956. In notifying the members of their appointments, Secretary McKay stated that he believed the advice and council obtainable through this council should continue to be available to the Department of the Interior.

Those appointed to the council are: Ernest R. Acker, president, Central Hudson Gas & Electric Corp.; B. C. Adams, president, The Gas Service Co.; Thomas H. Allen, president, Memphis Light, Gas and Water Division; F. M. Banks, president, Southern California Gas Co.; L. L. Baxter, president, Arkansas Western Gas Co.; Walter C. Beckjord, president, The Cincinnati Gas & Electric Co.; Joseph Bowes, chairman, Oklahoma Natural Gas Co.; Edward G. Boyer, gas department manager, Philadelphia Electric Co.; D. T. Burns, general manager, Citizens Gas and Coke Utility; Walter S. Byrne, president, Washington Natural Gas Co.; W. E. Caine, vice-president, Texas Eastern Transmission Corp.; Glenn W. Clark, president, Cities Service Gas Company.

Also, Norman B. Bertolette, president, The Hartford Gas Co.; Eskil I. Bjork, president, The Peoples Gas Light & Coke Co.; Everett J. Boothby, president, Washington Gas Light Co.; James Comerford, president, Consolidated Natural Gas Co.; A. W. Conover, president, Equitable Gas Co.; Charles P. Crane, president, Baltimore Gas & Electric Co.; Stuart M. Crocker, chairman, The Columbia Gas System; E. H. Eacker, president, Boston Gas Co.; Edward Falck, Edward Falck & Co.; John A. Ferguson, executive director, Independent Natural Gas Association of America.

Henry Fink, president, American Natural Gas Service Co.; R. Leslie Fletcher, president, Providence Gas Co.; Harland C. Forbes, president, Consolidated Edison Company of New York; N. W. Freeman, vice-president, Tennessee Gas Transmission Co.; N. Henry Gellert, consultant, Washington Natural Gas Co.; C. H. Gueffroy, president, Portland Gas & Coke Company; George S. Hawley, chairman, The Bridgeport Gas Co.; Joseph J. Hedrick, president and general manager, Texas Illinois Natural Gas Pipeline Co.; J. E. Heyke Jr., president, The Brooklyn Union Gas Co.; Norman Hirschfield, president, S. N. G. Industries; D. A. Hulcy, president, Lone Star Gas Co.; Paul Kayser, president, El Paso Natural Gas Co.; William L. Kendrick, fuel engineer, Boston public schools; Wister H. Ligon, president, Nashville Gas Company.

E. E. Lungren, executive vice-president, Northern Illinois Gas Co.; Alexander Macomber, Gas Service, Inc.; W. G. Maguire, chairman, Panhandle Eastern Pipe Line Co.; W. G. Marbury, president and manager, Mississippi River Fuel Corp.; D. A. McGee, president, Kerr-McGee Oil Industries; J. F. Merriam, president, Northern Natural Gas Co.; Dean H. Mitchell, president, Northern Indiana Public Service Co.; Robert W. Otto, president, Laclede Gas Co.; R. T. Parks, gas operations vice-president, Public Service Company of Colorado; C. P. Rather, president, Southern Natural Gas Co.; James C. Reid, executive vice-president and general manager, Southern Union Gas Co.; Charles G. Simpson, general manager, Philadelphia Gas Works.

In addition, Cecil W. Smith, president, Montana-Dakota Utilities Co.; Frank C. Smith, chairman, Houston Natural Gas Corp.; A. H. Stack, president and general manager, The Tampa Gas Co.; W. T. Stevenson, president, Texas Gas Transmission Corp.; Norman R. Sutherland, vice-president and general manager, Pacific Gas and Electric Co.; R. G. Taber, president, Atlanta Gas Light Co.; Tom P. Walker, Transcontinental Gas Pipe Line Corp.; John H. Ware III, chairman, Penn Fuel Gas, Inc.; John A. Weiser, executive vice-president, The Newport Gas Light Co.; A. H. Weyland, chairman (since retired), Arkansas Louisiana Gas Co.; and H. K. Wrench, president, Minneapolis Gas Company.

# Northern asks Canada for 300 million cubic feet of gas daily

NORTHERN NATURAL Gas Company has asked the Alberta Petroleum and Natural Gas Conservation Board for permission to export 300 million cubic feet of surplus gas per day from Alberta to the United States.

The gas would be transported by Northern to its markets in the North plains and to other pipeline companies serving the Great Lakes area. The 300 million cubic feet daily of surplus gas would come from Northern's wholly owned subsidiary, Northern Natural Gas Producing Co., and other producers in Alberta.

Northern said that its producing subsidiary holds jointly with others natural gas rights in the Savanna Creek area upon which there have been recent significant gas discoveries. The company expects there will be approximately 100 million cubic feet daily available from the Savanna Creek area by 1957. It also expects to purchase 200 million cubic feet daily of surplus gas in southern and central Alberta.

Under the plan Northern, through a subsidiary or nominee, would construct a main gathering pipeline 100 miles southeast from the Savanna Creek gas field to the Alberta-Montana border south of Cardston, Alberta. Estimated cost is $8 million.

The application stated that present gas reserve estimates in the Pincher Creek field indicate that substantial volumes of surplus gas may be available in excess of the volumes heretofore made available to Trans-Canada Pipe Lines, Limited.

At the international border, Northern would sell the gas to a wholly-owned subsidiary, Northern Plains Natural Gas Co., which would construct a 26-inch line 1,100 miles to connect with Northern's present system near Minneapolis, Minnesota. The line would extend through northern Montana and northern North Dakota to Grand Forks, then turn southeast to Minneapolis.

In addition to its own markets in the Midwest, Northern said that two other companies, Michigan-Wisconsin Pipeline Company and People's Gas Light & Coke Co., have expressed an interest in purchasing substantial volumes of Canadian gas from the proposed pipeline.

Northern asked that the permit cover 25 years from the fall of 1957. The maximum daily volume proposed at this time would be 300 million feet per day. The application stated that at an annual load factor of 90 per cent, the annual withdrawals would approximate 90 billion cubic feet. Gas reserves for the 25 years on this basis would be 2.5 trillion cubic feet.

Northern's principal market area includes Nebraska, Iowa, South Dakota, Minnesota and parts of North Dakota and Wisconsin. The 349 communities served by Northern are supplied with natural gas exclusively from the company's system.

Northern proposes to add 55 new communities to its system this year. The present capacity of Northern's system is 1.1 billion cubic feet of gas per day, and its annual sales total 300 billion cubic feet.

# Consumers to assist 39 college students annually

ESTABLISHMENT of a group of scholarship and fellowship programs in 18 Michigan colleges and universities has been announced by Consumers Power Company. Within three years the programs will provide financial assistance annually for 39 college and university students.

The plan contemplates assistance to graduate students interested in teaching engineering, to undergraduate engineering students, and to freshman students without restriction as to course of study. Scholarship recipients will be selected by participating colleges on the basis of merit and financial need.

At each of 18 Michigan colleges, one freshman student each year will receive a $200 scholarship for any course of study he chooses. Applicants must live in the Consumers service area, comprising 64 Michigan counties.

Participating institutions in the freshman scholarship program will include all degree-granting institutions in the Consumers service area, plus four neighboring Michigan institutions from which the company has regularly recruited engineering graduates. On the list are the University of Michigan, Michigan State University, Wayne University, University of Detroit, Michigan College of Mining and Technology, Central Michigan College, Western Michigan College, Adrian College, Albion College, Alma College, Aquinas College, Calvin College, Hillsdale College, Hope College, Kalamazoo College, Nazareth College, Olivet College, and Siena Heights College.

In each of five colleges, a sophomore engineering student will be granted a scholarship of $650 per year for the remaining three years of his undergraduate program. Students of mechanical or electrical engineering will have preference. The colleges are the University of Michigan, Michigan State University, Michigan College of Mining & Technology, University of Detroit, and Wayne University.

Two graduate students who preparing to teach engineering will receive assistance of not more than $2,000 per year for three years as they pursue studies leading to doctorate degrees.

## SGA holds conference

ON January 27, in Jackson, Miss., the Southern Gas Association sponsored a Domestic Meter and Regulator Round-Table Conference. The meeting was chairmaned by Tom F. Larche of the Mississippi Valley Gas Co. Topics discussed included: domestic meters; company policies; shop repair of meters; necessary considerations in the repair of meters; service type regulators; and freezing of regulators.

## Hold short course

TEXAS College of Arts and Industries, Kingsville, will sponsor its eleventh annual short course in gas technology on May 30, 31, and June 1. The course will be held on the campus of the college.

## Should be 'product'

THE article on solar energy in the A. G. A. MONTHLY, January issue, page 12, column 3, quoted J. E. Hobson as saying that the index of relative economic attractiveness was the ratio of the annual sunshine to the local cost of fuel. The word *product* should be substituted for *ratio* in the statement.

## Manufacturers honors employees for safety

**The A. G. A. Merit Award Certificate is presented for the excellent safety record of district No. 6 of Manufacturers Light and Heat Co., Pittsburgh. Left to right: M. E. Thomas, Uniontown manager; A. R. Kelliher, safety director; H. L. Brocious, district manager; C. F. Strong, Uniontown foreman; A. A. Gall, assistant district manager. Cigarette lighters were awarded to 290 employees**

## A. H. Weyland announces retirement as Arkansas Louisiana chairman

A. H. WEYLAND, head of Arkansas Louisiana Gas Company since 1945 and a prominent Shreveport civic leader for many years, has announced his retirement from active duty with the company.

Mr. Weyland will continue to serve the company in an advisory capacity after his retirement as chairman and member of the board of directors.

Mr. Weyland, who has been connected with the company and its predecessor and associated companies since 1919, has served as president and then chairman of the board of Arkansas Louisiana since 1945.

A graduate of Texas A. & M. College, he began his career in the oil and gas industry at Bartlesville, Okla., with the old Empire Companies.

He saw service in the development of many Southwestern oil fields.

In 1928 he was named superintendent of production for Arkansas Fuel Oil Corp., and in 1933 became general superintendent in charge of all operations of Arkansas Natural Gas Corp., and associated subsidiaries, which included Arkansas Louisiana Gas Company. In 1936 he became vice-president of Arkansas Louisiana Gas Company, and in 1945 was named vice-president and general manager of Arkansas Natural. At the same time he became president and general manager of Arkansas Louisiana Gas Co., Arkansas Pipeline Corp., Arkansas Fuel Oil Corp. and Orange State Oil Company.

When Arkansas Louisiana Gas Company was separated from Arkansas Natural Gas Corporation and Arkansas Fuel Oil Corporation Mr. Weyland continued as president of the gas company and subsequently was elected chairman of the board.

Mr. Weyland has been an active leader in affairs of the American Gas Association, the Southern Gas Association, the Mid-Continent Oil and Gas Association and the American Petroleum Institute.

# Personal and otherwise

## Honor Bruchhauser

M. L. BRUCHHAUSER, editor of Northern Illinois Gas Company's employee publication, *Flame*, recently received the 1956 Distinguished Service Editorial Award presented by the Industrial Editors Association of Chicago. Mr. Bruchhauser, a 27-year utility veteran, has done house publication work for the past 15 years, and has been editor of *Flame* since its inception in 1954. The association, representing more than 375 members in the area, selected Mr. Bruchhauser its top editor of 1956 for his outstanding editorial ability as well as the numerous worthwhile contributions he has made to the house publication field.

## Gas man knighted

NEWS comes from England that Henry Jones, deputy chairman of the Gas Council in London since 1952, was made a Knight Bachelor in the New Year Honors List. Mr. Jones, who comes from a "gas family," is chairman of the board of the East Midlands Gas Board. He is the great-grandson of Robert Jones, who was engineer and manager of the Chester Gas Company more than 100 years ago, the grandson of Harry Edward Jones, a former president of the Institution of Civil Engineers, and the son of Frank Harding Jones, who was president of the South Metropolitan Gas Company.

## Southern California appoints W. A. Wilson to manage new division

WILLIAM A. WILSON has been appointed manager of the newly created southeast division of the Southern California Gas Company. Although the new division will not be activated until early in 1957, he was appointed at this time to enable him to develop building plans, determine personnel requirements, and complete other details attendant to activating the division.

Mr. Wilson, who is now general staff supervisor in charge of appliance and dealer promotion in the sales department, will continue for the present to maintain his office at company headquarters. Mr. Wilson is a member of the American Gas Association and the Pacific Coast Gas Association, and has served on several of their committees.

Announcement of the new southeast division with headquarters in Downey was made last month by President F. M. Banks in a move to keep pace with the area's rapid growth.

Following construction of a division headquarters office and an operating base, the division will formally open in early 1957 to serve the communities of Artesia, Bellflower, Clearwater, Downey, Santa Fe Springs, Lakewood, Norwalk, Paramount, and Rivera.

## Name Adams general manager at Gas Service

B. C. Adams Jr.

APPOINTMENT of B. C. Adams Jr., as general manager of The Gas Service Company has been announced. His office will be in the company's general offices in Kansas City, Missouri.

Mr. Adams' entire career has been spent in the natural gas industry. Following graduation from the University of Oklahoma in 1936 with a BS in natural gas engineering, Mr. Adams was employed by the Oklahoma Natural Gas Company at Tulsa. On assignment by that company, he spent two years with the Petroleum Administration for War at Washington, D. C., as chief of the natural gas section.

From 1944 to 1950, he was assistant to the president and a director of Cities Service Gas Co., Oklahoma City. He was chairman of the operating committee and an ex officio member of the executive committee. During the last two years of this period he also served as vice-president of the Trunkline Gas Supply Company in charge of gas supply and reserves.

In 1950, Mr. Adams joined the Texas Gas Transmission Corp., Shreveport, La., as vice-president of the gas supply department. From 1953 until 1955, he was vice-president in charge of all operations of a subsidiary company, Texas Gas Exploration Corp., at Houston. Mr. Adams joined the operating staff of The Gas Service Company in September 1955.

## Fellows vice-president

HOUSTON NATURAL GAS CORP., Houston, Texas, has elected Kenneth Fellows vice-president and secretary. He has been secretary of the company since 1951.

A graduate of Iowa State University, Mr. Fellows joined Houston Natural in 1941 as advertising manager after several years in newspaper and publishing enterprises in Iowa and Texas. As vice-president, he will continue to have general supervision over personnel, public relations, advertising, and insurance matters.

Mr. Fellows is a member of the Domestic Advertising Committee of the American Gas Association, and has served as chairman of the Personnel Relations Section of the Southern Gas Association. He also has been active as chairman and member of Southern Gas Association convention publicity committees.

## Appoint Schmidt system gas supply manager

Jacob J. Schmidt

JACOB J. SCHMIDT former general production superintendent and assistant to the president of The East Ohio Gas Co., has been appointed manager, system gas supply, for the Consolidated Natural Gas Company.

His offices will be in Pittsburgh, headquarters of two of the system's subsidiaries—The People's Natural Gas Company and New York State Natural Gas Corporation. He will coordinate the production and storage of gas for the system.

A long-time member of the American Petroleum Institute, Mr. Schmidt was cited by that body in 1952 for 23 years of distinguished service in the division of production, and for chairmanship of various committees. A graduate of the University of Indiana, he is a member of many organizations including the American Gas Association, the American Standards Association, and the American Association for the Advancement of Science.

Another new appointment at Pittsburgh headquarters is that of Dr. Albert J. Blair, who will be assistant medical director of five of the company's subsidiaries. He will assist in overseeing the medical program of the system. Dr. Blair is a graduate of West Virginia University, with a M.D. degree from Jefferson Medical College.

## Allyne vice-president

ARTHUR B. ALLYNE has been elected a vice-president of the Pacific Northwest Pipeline Corp., Houston. He has, since February 1955, been project engineer for Fish Northwest Constructors, Inc., the company which has had the task of engineering and constructing the Pacific Northwest system. Having participated in the management of the construction of Pacific Northwest's huge project, Mr. Allyne now moves into the operating company itself. Prior to his connection with the Pacific Northwest project, Mr. Allyne was assistant general manager of Honolulu Gas Co., Ltd. and Pacific Refiners, Ltd., Hawaii. Earlier, he was employed for six years by Ebasco, Inc. of New York as a gas engineering consultant. He is a member of the American Gas Association.

## Elect Provonchee

CHARLES W. PROVONCHEE, personnel adviser, Providence (R.I.) Gas Co., has been elected a vice-president of the company. Mr. Provonchee, a graduate of Brown University, joined Providence Gas in 1933. He worked for some time as a househeating salesman. He organized the personnel department and directed it for several years, and more recently has had general supervision of employee and customer relations. He is a member of the American Gas Association.

## Promote Makemson

AT A RECENT MEETING of the board of directors of the Geo. D. Roper Corp., Rockford, Ill., John H. Makemson was elected executive vice-president and general manager. He previously held the position of vice-president and general manager of the appliance division. L. R. Jensen, formerly vice-president in charge of operations, was named vice-president and appliance general manager. Norman C. Kreuter was appointed vice-president and appliance sales manager.

## Honor Gibbons

LAST MONTH Martin Gibbons, manager of dealer relations, Brooklyn (N.Y.) Union Gas Co., was honored at a dinner attended by 375 persons. Mr. Gibbons was selected the outstanding man of the year in service to his industry and to the American Red Cross, through activities of the Brooklyn chapter. He was presented a gold wrist watch at the dinner, which was under the auspices of the plumbing and heating division, Brooklyn chapter, American Red Cross.

## Names in the news—a roundup of promotions and appointments

### UTILITIES

**Francis P. Gately** has been appointed auditor of Consolidated Edison Company of New York, Inc. Mr. Gately, who has been associated with the company and its predecessors since 1916, succeeds **Arthur Hald** who retired Feb. 29.

Appointed to the recently created position of gas sales engineer for Southern Union Gas Company is **Maurice L. Carlson.** Major duties of the position involve promotion of use of natural gas for air conditioning in the company's distribution system.

**Ray Nelson** has been named to the newly created position of air conditioning engineer for Northern Illinois Gas Company with headquarters in Bellwood. A 20-year utility veteran, he was formerly commercial engineer for the company in its Rock River area.

**Cleland R. Fee,** an air conditioning specialist for The Ohio Fuel Gas Company in the Mansfield district since 1950, has been transferred to the Columbus district office. In his new post, he will work with homeowners, architects, and contractors in the installation of Servel year-round gas air conditioners.

**Elton Stuenckel,** advertising manager of South Jersey Gas Co., has also been appointed sales promotion manager. Among his assignments will be the development of an expanded dealer promotion program. **John McWilliams,** formerly assistant advertising manager, has become supervisor of advertising.

### PIPELINES

New superintendent of engineering contracts for Natural Gas Pipeline Company of America and its affiliates is **Joseph W. Parys.** He has been with the company for seven years, working as a draftsman and engineer before joining the engineering contracts department.

### MANUFACTURERS

The promotion of **James G. Martin** to director of purchases of the Wilcolator Co., Elizabeth, N. J., has been announced. He will be in charge of all purchases for Wilcolator, manufacturer of precision thermostatic temperature controls for appliances.

The Payne division of Carrier Corporation has announced the appointment of **George Haladay** to the position of advertising manager. He formerly served as production manager and assistant advertising manager for the division's advertising department.

**Joe Bustad** has been appointed field representative for the Los Angeles branch of General Controls Company. He is assigned to the San Fernando Valley territory, and will represent the company's full line of automatic pressure, temperature, level and flow controls.

**Arnold Carlin,** at one time a test engineer with **A. G. A. Laboratories,** has been appointed a sales engineer in the air conditioning division of the Pacific Scientific Company. He will represent White-Rodgers Controls and Alco Valves for Pacific, operating from the firm's Los Angeles office.

Permaglas division of A. O. Smith Corporation has selected **L. H. Hoelter** as manager of its builder sales department. Mr. Hoelter, who has spent 15 years at Permaglas, previously headed the Permaglas section of the North Central regional office. **C. L. Hewitt Jr.** will henceforth devote full time to being manager of heating and air conditioning products without sales responsibilities. Two newly created posts as assistant general sales managers are now filled by **J. Wayne Burleson,** formerly Southwest district manager at Dallas, and **W. T. Halket,** formerly New England district manager at Boston. A consolidation of sales districts provides that **W. A. Dunn** becomes manager of the New England area and metropolitan New York; **Don Shafer** is the newly appointed manager of district No. 73 out of Pittsburgh, replacing **Ken O'Gorman** who moves to Chicago to take over district No. 76. **Herman Johnson,** who formerly headed one of the combined districts at Philadelphia, now is Eastern manager of Permaglas commercial water heater sales, also out of Philadelphia.

**Madonna A. Bergman** has joined Robertshaw-Fulton Controls Company's home economics department. She will divide her time between work in the department, situated in the Robertshaw Research Center, Irwin, Pa., and field work in cooperation with appliance manufacturers, utilities, and home economics groups. She was formerly engaged in home economics test work with a major appliance manufacturer.

# New A.G.A. members

## Associate Member

Texas Gas Corp., Houston, Texas (Russell M. Riggins, Pres.)

## Manufacturer Companies

Deering Air Conditioning Co., The, Cincinnati, Ohio (Harry C. Fisher, Works Mgr.)

Furnasman Manufacturing Co., Ltd., Winnipeg, Can. (C. M. Helyar, Pres. & Gen. Mgr.)

General Gas Appliances Ltd., Audenshaw, Manchester, Eng. (R. A. Smith, Dir. & Gen. Mgr.)

Hook Manufacturing Co., Inc., McDonald, Pa. (C. Howard Hook Jr., Vice-Pres.)

Screw Machine Products Co., Portland, Ore. (William H. Schwabe, Pres.)

R. D. Spickler Co., Inc., Mamaroneck, N. Y. (Robert D. Spickler, Pres.)

## Individual Members

Mrs. Mary F. Allen, Southern Counties Gas Co., Los Angeles, Calif.

Oscar E. Anderson, South Georgia Natural Gas Co., Thomasville, Ga.

Clarke B. Ash, Columbia Gas System Service Corp., New York, N. Y.

Stephen H. Baer, Southern Counties Gas Co., Los Angeles, Calif.

Kenneth M. Baker, Columbia Gas System Service Corp., New York, N. Y.

L. J. Berkheimer, Central Electric & Gas Co., Lincoln, Nebr.

Harold J. Bookman, Southern Counties Gas Co., Ventura, Calif.

Alton M. Braddock, Southern Counties Gas Co., Indio, Calif.

Joseph E. Brinkmann, The Cincinnati Gas & Electric Co., Cincinnati, Ohio

Clyde O. Carpenter Jr., Knoxville Utilities Board, Knoxville, Tenn.

William Z. Chamlee, Southern Counties Gas Co., Los Angeles, Calif.

John E. Cohoon, The Brooklyn Union Gas Co., Brooklyn, N. Y.

Robert W. Collins, The Brooklyn Union Gas Co., Brooklyn, N. Y.

LaRue Colwell, Eastern Gas & Fuel Associates, Boston, Mass.

Jack Cowan, Southern California Gas Co., Los Angeles, Calif.

E. G. Croom, Southern Counties Gas Co., Los Angeles, Calif.

Stanley Croonquist, Southern Counties Gas Co., Los Angeles, Calif.

Elizabeth J. Crowe, Southern Counties Gas Co., Pomona, Calif.

William R. Curley, Stuart Steel Protection Corp., Kenilworth, N. J.

I. Edgar Davis, The Ohio Fuel Gas Co., Columbus, Ohio

Kenneth Denio, Pacific Gas & Electric Co., Trona, Calif.

Charles A. Drexel, New Jersey Natural Gas Co., Asbury Park, N. J.

Martin A. Elliott, Institute of Gas Technology, Chicago, Ill.

Eric R. Erikson, The Brooklyn Union Gas Co., Brooklyn, N. Y.

Eugene M. Fahey, Public Service Electric & Gas Co., Newark, N. J.

Paul Feinsod, Kings County Lighting Co., Brooklyn, N. Y.

Leonard P. Fries, New York State Electric & Gas Corp., Binghamton, N. Y.

Joseph L. Frigiola, The Brooklyn Union Gas Co., Brooklyn, N. Y.

Lawrence J. Gaissert, South Georgia Natural Gas Co., Thomasville, Ga.

C. E. Gray, Southern California Gas Co., Inglewood, Calif.

Richard Greenlund, Wisconsin Fuel & Light Co., Wausau, Wis.

G. A. Grexton, Southern California Gas Co., Los Angeles, Calif.

Frederic G. Haeuser, A. O. Smith Corp., Milwaukee, Wis.

Prentiss R. Ham, Southern Counties Gas Co., Duarte, Calif.

Thomas Hannon, Philadelphia Gas Works Div., U.G.I. Co., Philadelphia, Pa.

Walter E. Haskell, Southern California Gas Co., Inglewood, Calif.

Medford Hazel, Philadelphia Electric Co., Philadelphia, Pa.

John T. Hepner, New York & Richmond Gas Co., Staten Island, N. Y.

William C. Hereford, New York & Richmond Gas Co., Staten Island, N. Y.

William W. Hill, Northern States Power Co., Minneapolis, Minn.

Mark G. Hoepfner, Public Service Electric & Gas Co., Newark, N. J.

William H. Holcomb, El Paso Natural Gas Co., El Paso, Texas

Charles R. Holloway, Jr., Portland Gas & Coke Co., Portland, Ore.

George Horhota, The Brooklyn Union Gas Co., Brooklyn, N. Y.

James H. Hurst, Southern Counties Gas Co., West Covina, Calif.

Bruce J. Jensen, Public Service Electric & Gas Co., Newark, N. J.

Grant H. Kenyon, Southern Counties Gas Co., Los Angeles, Calif.

Elmer F. Koch, Southern Counties Gas Co., Santa Maria, Calif.

L. D. Kysar, Southern Counties Gas Co., Los Angeles, Calif.

Stuart L. Lamkin, Transcontinental Gas Pipe Line Corp., Houston, Texas

Christian Langenbach, New York & Richmond Gas Co., Staten Island, N. Y.

Richard E. Lembcke, Cities Service Research & Development Co., Tulsa, Okla.

Robert K. Lowell, Southern Counties Gas Co., Whittier, Calif.

Ward L. Luther, Jr., Ingersoll-Rand Co., Philadelphia, Pa.

James E. McCartney, The Brooklyn Union Gas Co., Brooklyn, N. Y.

Ralph C. McCollum, The Peoples Gas Light and Coke Co., Chicago, Ill.

Richard L. McGuckian, New York & Richmond Gas Co., Staten Island, N. Y.

Edmond G. Michael, Kings County Lighting Co., Brooklyn, N. Y.

John Miller, Public Service Electric & Gas Co., Newark, N. J.

Leo F. Murlowski, Minneapolis Gas Co., Minneapolis, Minn.

Harold Oldenbusch, The Brooklyn Union Gas Co., Brooklyn, N. Y.

Joseph A. Olivera Jr., Southern Counties Gas Co., Santa Maria, Calif.

F. Stuart Olson, The Brooklyn Union Gas Co., Brooklyn, N. Y.

J. W. Ostler, Canadian Meter Co., Ltd., Milton, Ontario, Can.

John H. Peebles, Southern Counties Gas Co., Los Angeles, Calif.

Paul J. Prester Jr., New York & Richmond Gas Co., Staten Island, N. Y.

Walter C. Prill, Southern Counties Gas Co., Los Angeles, Calif.

Sherman W. Prince Jr., W. A. Stoeltzing, Inc., Pittsburgh, Pa.

George M. Probst, Equitable Gas Co., Pittsburgh, Pa.

John J. Prybyla, Stone & Webster Service Corp., New York, N. Y.

John H. Rees, Panhandle Eastern Pipe Line Co., Kansas City, Mo.

Cortis N. Rice Jr., Northern States Power Co., Minneapolis, Minn.

Arthur W. Richards, San Diego Gas & Electric Co., San Diego, Calif.

Donald B. Robertson, Southern Counties Gas Co., Los Angeles, Calif.

Eric E. Rogner, The Brooklyn Union Gas Co., Brooklyn, N. Y.

Chester A. Roush Jr., Richards & Associates, Carrollton, Ga.

S. G. Ryan, Southern Counties Gas Co., Los Angeles, Calif.

F. R. Schallert, Southern Counties Gas Co., Santa Maria, Calif.

Roy W. Scheunemann, Wisconsin Fuel & Light Co., Manitowoc, Wis.

Elmer V. Schneider, San Diego Gas & Electric Co., San Diego, Calif.

Alexander G. Semple, The Bridgeport Gas Co., Bridgeport, Conn.

Benjamin L. Serra, New York & Richmond Gas Co., Staten Island, N. Y.

John C. Shaffer, Oil & Natural Gas Service, Laguna Beach, Calif.

Virginia Shattuck, Pacific Gas & Electric Co., San Rafael, Calif.

John O. Sholar, South Georgia Natural Gas Co., Thomasville, Ga.

Mark P. Siebers, New York & Richmond Gas Co., Staten Island, N. Y.

Max Silver, Long Island Lighting Co., Hempstead, N. Y.

Robert C. Sise, South Georgia Natural Gas Co., Thomasville, Ga.

Walter C. Skidmore, Long Island Lighting Co., Bay Shore, N. Y.

Kathleen Skinner, Portland Gas & Coke Co., Portland, Ore.

Michael Sonsire, Long Island Lighting Co., Bay Shore, N. Y.

John L. Spaventa, Kings County Lighting Co., Brooklyn, N. Y.

Troy R. Stilley, Illinois Power Co., Decatur, Ill.

Herman A. Stokke, Northern States Power Co., Minneapolis, Minn.

Paul S. Storch, Elizabethtown Consolidated Gas Co., Elizabeth, N. J.

Louis J. Stromberg, Northern States Power Co., Minneapolis, Minn.

Donna M. Sullivan, Southern Counties Gas Co., Venice, Calif.
Charles A. Sweningsen, Southern Counties Gas Co., Los Angeles, Calif.
Reginald W. Tarr, Mystic Valley Gas Co., Malden, Mass.
Miron E. Tharsing, Southern Counties Gas Co., El Monte, Calif.
Linus A. UpDeGraff, UpDeGraff-Zukerman, Inc., Columbus, Ga.
George Walmsley, Trancontinental Gas Pipe Line Corp., Malvern, Pa.
Joseph R. Weger, Baltimore Gas and Electric Co., Baltimore, Md.
Emmet T. White, Public Service Electric & Gas Co., Newark, N. J.
Ben D. Willis, Lone Star Gas Co., Dallas, Texas
Sidney H. Wilson, American Hard Rubber Co., New York, N. Y.
Robert B. Wright, A. O. Smith Corp., Dallas, Texas
M. A. Young, Southern Counties Gas Co., Los Angeles, Calif.
Joseph T. Zito, The Brooklyn Union Gas Co., Brooklyn, N. Y.
Leon Zuckerman, New Jersey Natural Gas Co., Asbury Park, N. J.

# OBITUARY

## Herman Russell

chairman of the board of the Rochester Gas and Electric Corp., and a past president of the American Gas Association, died March 14 following a long illness. He was 77 years old.

Mr. Russell, an outstanding leader in the gas industry, was a graduate of the University of Michigan with a BS degree in chemistry. In 1900 he was awarded a master's degree in chemistry and gas engineering from that university. While a student, he was the winner of the first scholarship established by the Michigan Gas Association.

Immediately following graduation, he joined Detroit Gas Co., working as an assistant superintendent. Two years later he was made superintendent of the gas manufacturing department of the San Francisco Gas & Electric Company. In 1904, he became assistant superintendent of gas manufacturing for the Cincinnati Railway and Light Company.

The predecessor of Rochester Gas and Electric Company engaged Mr. Russell as assistant superintendent of gas works in 1905, promoting him to superintendent of gas manufacturing a year later. He was appointed assistant general manager of the entire property in 1914. In 1919 he was promoted to assistant general manager, then vice-president and general manager in 1922, director in 1923, president in 1929, and chairman of the board in 1947.

During his lifetime, he was extremely active in civic, social, and industrial groups. He was a director of A.G.A. for many years and its president in 1937; a member of the Edison Electric Institute; one of the founders and a trustee of the Institute of Gas Technology; and a past member of the American Standards Association.

He leaves his widow, Laura Bradfield Russell; a son, Edwin Russell; a daughter, Mrs. Ralph Kelly; a brother, Curran Russell; and five grandchildren.

## Frank Martin

56, purchasing agent and supervisor of stores at Northern Natural Gas Co., Omaha, Neb., died suddenly after a brief illness.

Mr. Martin joined the gas industry in 1916 in the purchasing and stores department of Kansas Natural Gas Company. In 1920 he joined the purchasing and stores department of Lone Star Gas Co., later becoming assistant supervisor of stores for that company. In 1930, he became purchasing agent for Missouri Valley Gas Co., predecessor for Northern Natural.

Survivors of Mr. Martin include his brother Donald and an aunt.

## William Laverty

superintendent of distribution at Cambridge (Mass.) Gas Co., died recently at the age of 69. He had been associated with the company for 46 years, and retired from active service in July 1955.

He was a member of the American Gas Association, New England Gas Association, and Cambridge Chamber of Commerce.

## Edward D. Anderson

54, executive vice-president of Northern Indiana Public Service Co., died on Feb. 18. Mr. Anderson had worked with the utility since his graduation from Purdue University in 1924.

He started as cadet engineer, and served successively as mechanical engineering assistant, gas engineer, district manager, division manager, and general service manager. In 1938 he was elected vice-president, and in 1955, executive vice-president.

Mr. Anderson was active in industrial and civic organizations. A member of the American Gas Association, he served a term as president of the Indiana Gas Association, and also as president of the Indiana Electric Association. He was active in the Chamber of Commerce, and was a trustee of Purdue University.

Survivors are his widow Imogene, two daughters, a son, two sisters, a brother, and three grandchildren.

# CONVENTION CALENDAR

## 1956

### APRIL

16-18 •National Conference of Electric and Gas Utility Accountants, Hotels Biltmore and Commodore, New York City

16-19 •A. G. A. Sales Conference on Industrial and Commercial Gas, Hotel Roanoke, Roanoke, Va.

19-20 •Indiana Gas Association, French Lick Springs Hotel, French Lick, Ind.

19-21 •GAMA Annual Meeting, The Greenbrier, White Sulphur Springs, W. Va.

23-25 •Southern Gas Association Convention, Dallas, Texas

23-25 • A. G. A. Midwest Regional Gas Sales Conference, Edgewater Beach Hotel, Chicago, Ill.

### MAY

6-9 •LPGA Convention and Trade Show, Conrad Hilton Hotel, Chicago, Ill.

7-8 • A. G. A. Residential Gas Section Eastern Gas Sales Conference, Park Sheraton Hotel, New York City

7-10 •A. G. A. Distribution, Motor Vehicles and Corrosion Conference, Congress Hotel, Chicago, Ill.

7-11 •National Restaurant Association Convention and Exposition, Navy Pier, Chicago, Ill. (A. G. A. will exhibit)

7-11 •A. G. A. Commercial Gas School, Edgewater Beach Hotel, Chicago, Ill.

10-11 •A. G. A. Gas Supply, Transmission and Storage Conference, Conrad Hilton Hotel, Chicago, Ill.

16-18 •A. G. A. Chemical, Engineering and Manufactured Gas Production Conference, Benjamin Franklin Hotel, Philadelphia, Pa.

22-24 •Pennsylvania Gas Association, Pocono Manor Inn, Pocono Manor, Pa.

24-25 •Natural Gas and Petroleum Association of Canada, Sheraton-Brock Hotel, Niagara Falls, Ontario, Can.

### JUNE

4-7 •Edison Electric Institute, Atlantic City, N. J.

17-23 •World Power Conference, Vienna, Austria

25-26 •Michigan Gas Association, Grand Hotel, Mackinac Island, Mich.

26-29 •Canadian Gas Association, Manior Richelieu, Murray Bay, Quebec, Canada

26-29 •American Home Economics Association, Armory, Washington, D. C.

# Personnel service

## SERVICES OFFERED

**Public Relations Executive Available**—broad corporation and trade association experience for more than 15 years. Versatile, capable of promoting meaningful down-to-earth program. Harvard Graduate School. Top references. **1833.**

**Consultant**—available on a fee basis for consultation on your gas analysis problems. Knowledge of every method including instrumentation. **1834.**

**Executive or Administrative Accountant**—progressively broadening experience as: auditor of large combination utility; consultant in Systems and Methods Department of major business and consulting firm; treasurer of gas company. Degree in accounting. Married. Now available. **1836.**

Many years of practical experience combined with knowledge of the same, offered: Experiences in natural, LPG and manufactured gases, distribution and utilization; management level desired. **1837.**

**Executive**—present position vice president and general manager of medium size gas utility. Also have held management positions with combination utility. Have reached limit of growth with present company. Qualified for top management with excellent references, training, experience and background. Desire to locate with a company with greater opportunity. **1838.**

**Graduate engineer,** with extensive experience in design, development and production of gas appliances is interested in a connection that can afford the opportunity to make full use of this background. **1839.**

**Property Manager or Superintendent**—ten years' diversified, practical experience in natural gas distribution. Broad knowledge of operations, construction, customers service work, and maintenance. Experienced in administration, sales, and utilization. Desires permanent position with company who will appreciate and recognize performance. **1840.**

**Communication Engineer & Administrator**—B.S. Degree, 22 years' experience in large gas and electric co. Eight years with N. Y. Telephone Co., NYC. Engineering-supervising operation mobile and microwave radio, manual and dial telephone switchboards and customer service boards, supervisory and telemeter equipment and closed circuit TV. Author of papers A. G. A., E.E.I. and Society of Automotive Engineers. Held important chairmanships and coordinator jobs in national associations, trustee school board ten years. Travel anywhere. **1841.**

## POSITIONS OPEN

**Natural Gas Research Engineer**—Bureau of Mines Petroleum Experiment Station, Bartlesville, Okla., needs experienced natural gas engineer to take the lead in research on deliverability of underground storage reservoirs and productivity of natural-gas wells, being conducted in cooperation with A. G. A. Knowledge of basic theory of fluid flow and mathematical aptitude necessary. Permanent Civil Service position; vacation, insurance, retirement benefits. ($7,500-9,000.) Reply giving references, education, professional experience. **0790.**

**Efficiency Engineer**— graduate engineer with at least two years' utility operating experience and basic knowledge of utility accounting functions. Will work directly under direction of vice president in analysis of property operation. Must be free to travel 75% of time. Submit complete resume and starting salary desired. **0801.**

**Project Engineer**—with proved design and development experience related to gas fired residential heating equipment for nationally known mid-west manufacturer. Must be resourceful, well informed and capable of assuming independent responsibility. Knowledge of manufacturing techniques and familiarity with A. G. A. requirements are essential. **0802.**

**Residential Sales Manager**—tremendous opportunity in Spokane, Wash., for domestic sales manager, natural gas. Second in command of 30-man sales staff. Gas merchandising experience and ability to hire and train domestic sales force essential. Principal effort to be in house heating. Company will merchandise domestic conversion burners, water heaters, ranges, etc. Give complete background, experience, references. Your reply confidential. **0803.**

**Industrial Gas Engineer**—natural gas arrives in Spokane, Wash., July, 1956. Need man to head Industrial Commercial Dept. Experience in boiler conversions, industrial burners, etc., required. Give complete background, education, references. Your reply confidential. **0804.**

**Engineers**—with natural gas due to arrive soon in Pacific Northwest, Portland Gas & Coke Co. is seeking qualified engineers. Address inquiries to: Personnel Dept., Portland Gas & Coke Co., Public Service Building, Portland, Oregon. **0805.**

**Assistant Home Service Directors**—midwest gas utility seeking two graduate home economists. Former utility experience desirable. Should enjoy working with small groups and public schools. Five day work week—car necessary. Salary and expenses plus other fringe benefits. Submit complete resume. All applications held in strictest confidence. **0806.**

**Sales Executive**—large midwestern gas utility seeking man to formulate policy and direct all sales promotion activities, including merchandising, advertising, dealer and builder promotion, commercial and industrial sales, air conditioning, home service, etc. Should have adequate speaking and writing ability. Age: preferably 40 to 50. Replies regarded as confidential. **0807.**

**Graduate Engineer, Sr.**—for design and development of home heating equipment. Must have knowledge of A. G. A. and Underwriters' testing procedures. Permanent position with large Midwest manufacturer of heating and air conditioning equipment. Write giving complete resume and salary requirements. **0808.**

**Graduate Chemical Engineer**—wanted by equipment manufacturer for new applications of gasification apparatus and other equipment. Unusually good opportunity in design, development and new field applications. Location Midwest, salary open. **0809.**

**Graduate Engineer**—Mid-west gas utility requires services of gas engineer with administrative ability to take charge of all gas operations in connection with construction, development, and promotion of natural gas. Independently owned company with no holding company connections. Prefer man under 35 with technical education and experience in gas operations. For qualified man this is a permanent, pleasant, well-paid position. Can lead to full management with opportunity to purchase share in company. **0810.**

**Test and Development Engineer**—experienced in testing and development of gas fired residential heating equipment. Opening is with expanding Southern California manufacturer of heating and air conditioning equipment. **0811.**

**Gas Distribution Engineer**—excellent opportunity available for man with 3 to 5 years experience in natural gas distribution. Must have degree in mechanical, civil, petroleum or natural gas engineering. Will headquarter in Dallas. Age 25 to 35. We are a natural gas utility company operating in the Southwest. Excellent benefit program. Please give complete resume of qualifications. **0812.**

**Administrative Vice-President**—position carries with it responsibility for the coordination of operating, commercial and accounting functions and also for the administrative aspects of the company's organization and operations. Should have a combination of operating and/or construction and commercial and accounting experience in at least two of the four branches of the utility field. For a responsible, ambitious and aggressive man this is a substantial opportunity with an expanding utility operating company. Salary range—$15-25,000. Age bracket, 38-45. **0813.**

**Assistant Vice-President-Operations**—a man who is thoroughly familiar with the public utility field, including operations, engineering and construction pertaining to such work. He should have sufficient experience and knowledge of rates to enable him to play a major role in analyzing present rates, supervise in the making of studies for new rates, and participate as a key witness in the preparation of rate cases for Public Utility Commissions. Must be able to handle labor, labor contracts and negotiations and evaluate manpower requirements of individual property operation. He must therefore be equipped constructively to criticize and improve personnel organization. (32-38) Salary range $10-12,000. **0814.**

# Expect 35 billion pound petrochemical production in '56

NEARLY 3,000 chemical substances are produced from natural gas and petroleum, reported Henry G. McGrath, associate manager of M. W. Kellogg Company's business development department, New York, and new products continue to come from these sources at the rate of 400 a year. In 1956, total petrochemical production is expected to reach a volume of nearly 35 billion pounds, he said, and domestic production of all chemicals will approximate 127 billion pounds.

Mr. McGrath spoke recently before the petroleum chemistry division of the American Chemical Society.

The meeting was arranged by the Philadelphia, Lehigh Valley, Delaware, North Jersey, South Jersey, Trenton and Princeton sections of ACS, with the Philadelphia section as host.

Taking a long-range look at the future, Mr. McGrath estimated that the petrochemical output in 1960 would be 60 billion pounds (33 per cent of total chemical production) and by 1965 it would approach 125 billion pounds, or 50 per cent of all chemicals. Over the same period, he predicted, the dollar value of petrochemicals will go to $5.7 billion in 1960 and $9 billion (60 per cent of total chemicals value) in 1965.

Petrochemicals may be broadly defined as those chemicals derived from natural gas and petroleum sources. The major petrochemicals have been listed as ammonia, synthetic rubber, carbon black, butadiene for rubber, ethylene glycol for anti-freeze, the common alcohols, acrylonitrile, phenol (carbolic acid), styrene, polyethylene, formaldehyde, and a number of other commercially important organic (carbon-containing) chemicals. From its beginning in the 1920's until recently, production of the petrochemicals has been the province of oil and chemical companies. In the past few years, shipping, farm equipment, rubber manufacturing and gas pipeline firms have entered the field.